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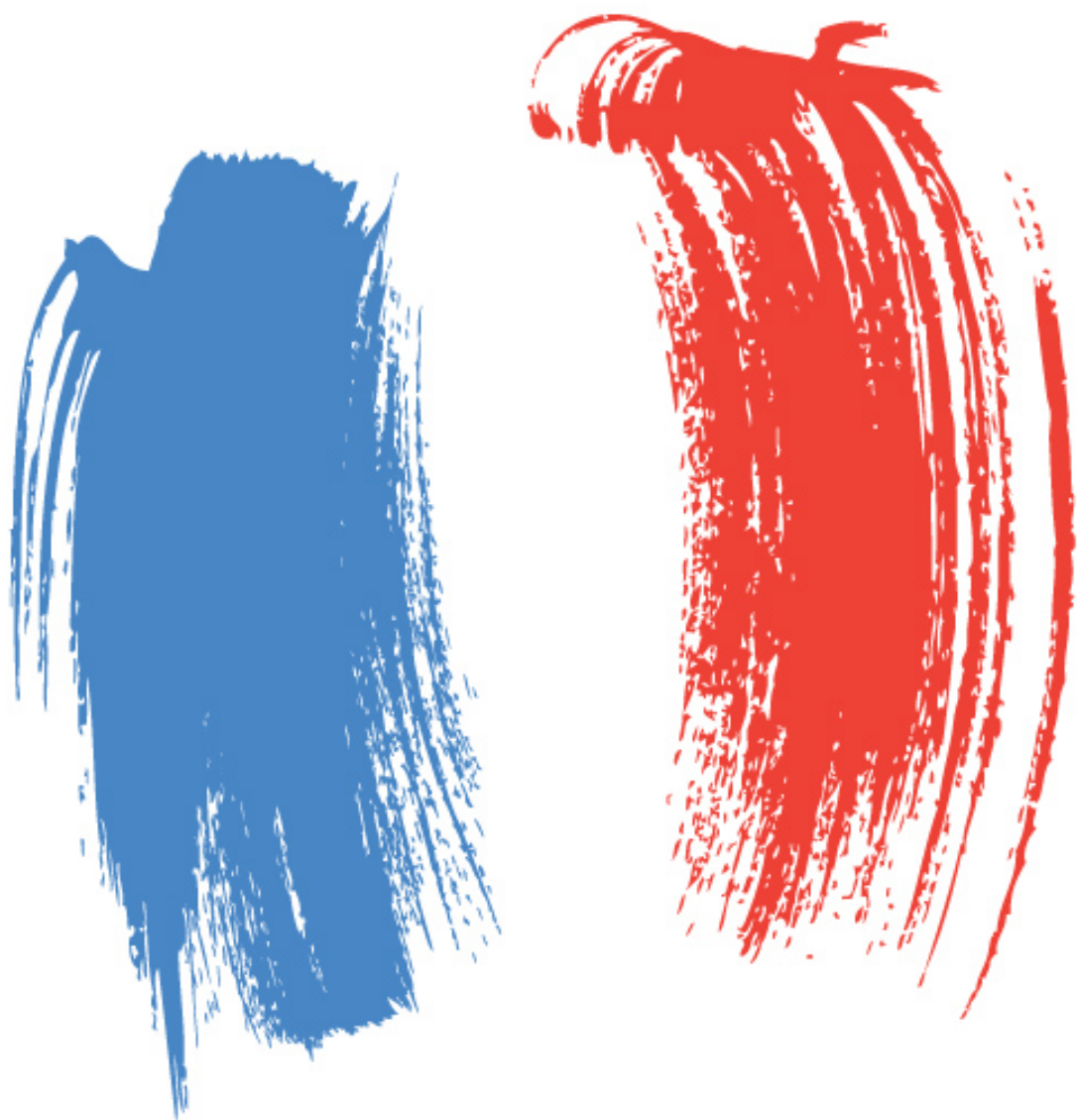
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Design Options and Learning Analytic Pathways in Doing Agile Scrum Team Work in Education

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Abstract

We extend a standard for doing agile scrum teamwork in education that permits individual assessment within teams (IAFOR ECE2020). Since the teacher's bandwidth in education is limited and increasingly under pressure, we focus on course design options that can be used to leverage the bandwidth. One economizing option in courses is to let teams prerecord prototype presentation videos before sprint review takes place. This allocates expensive teacher's time to team interrogation time which enriches interaction and engagement and enables effective sharing between teams to improve communication flow in sparse stakeholder feedback scenarios. We also describe three learning analytic pathways that can be smartly integrated into learning dashboards to monitor student and team progress or into learning recommender systems and chatbots to generate action-directed, just-in-time feedback and advice to students. The first one is for setup that enables control of important team diversity and student inclusion parameters such as demographic, personality and professional traits that are known from the student population in advance and that enables handy attribution of 21st-century skill sets within teams. The second one is the product pathway that builds on a datastream generated from qualitative, quantitative and immersive product features that are known from prototyping. The third one is the process pathway in which information on 21st-century skills is generated that are at play in individual and dynamic team processes. We are convinced that these extensions will further enable effective learning technology that is directed to applying agile scrum in education efficently, both for students as teachers.

Keywords: Scrum, Education, Team Work, Design Options, Learning Analytic Pathways

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Introduction

Imagine a world wherein education can take place outside education institutes in the real professional work field. Artificially created assignments for students by lecturers can be replaced by work that truly matters and that needs to be done and that pays off in the real world. Valuable human resources that are scarce in the labor market such as engineers and data scientists become earlier available to the work field. Scarcity in the labor market due to the foreseen demographic transformation in the Western society will be softened. Lifelong education initiatives will be tailored.

Scrum is an agile framework for developing, delivering, and sustaining complex products (Schwaber & Sutherland, 2017; Schwaber & Sutherland, 2020). It is flexible, fast, low cost and allows for agility for instance. In this paper we use the original scrum framework of Schwaber & Sutherland (2017) as a basis that has recently been updated to Schwaber & Sutherland (2020). This is the most applied framework in the professional work field around us, e.g., in small to medium enterprises, but also in big companies such as KPN, Amazon, and bol.com, etc. In a nutshell, scrum requires a scrum master to foster an environment where: (1) A product owner orders the work for a complex problem into a product backlog; (2) The scrum team turns a selection of the work into an increment of value during a sprint; (3) The scrum team and its stakeholders inspect the results and adjust for the next sprint; and (4) *Repeat*.

Application of scrum in education was hindered for a long time, because, in education, we often want individually allocated grades for group work, and, until recently, this was not possible. This ackward and unpleasant situation has ended reccently because with our newly developed standard that we defined and built on top of the scrum framework of Schwaber & Sutherland (2017) it became possible to effectively assign individual grades to students when needed. Please refer to my earlier paper and presentation for any further details (Loke, 2020).

In this new, additional paper we, firstly, extend on the standard that we currently use for doing scrum in education by giving some relevant design options for teachers. We, secondly, emphasize on three learning analytic pathways that have been found relevant in several courses that we recently have run with the standard. These learning analytic pathways are directed to product, process, and setup in our standard, respectively. To steer expectations for prospective students and teachers that will work with our standard, some illustrative processing results/examples are depicted per pathway. After that, we, thirdly, will discuss and conclude on our work.

Design options

Two of the most important design options that are in particular relevant for teachers are related to: (1) Role topologies of doing scrum team work in education; and (2) Anchoring agile scrum in a course within an overall education program. As (1) has already been described in Loke (2020) and further information can be found there, we will focus below on design option (2).

We distinguish between implicitly and explicitly embedding agile scrum into learning objectives and learning outcomes. The characteristics of implicit embedding are: (A) Focus is on product for stakeholder that is delivered by development team; (B) Boldly assumes that students are already acquainted with the Agile Scrum process; (C) Grading is on product

features. Process features that are related to Agile Scrum will not come back in the grading grid and are not graded; (D) Enables and stimulates, both formative and summative, feedforward and feedback loops between product owners (teachers) and development team (students) on product dynamics; (E) Enables voluntarily, formative, feedforward and feedback loops on process dynamics. An example of implicit embedding can be seen in Table 1 (note that the example is for illustration purposes only).

Learning Objectives Database Management course. Student is able to..	(Alignment with overall program) Learning Objectives Master Digitally Driven Business. Student is able to..	Learning Outcomes Database Management course. Student does/shows..	(Alignment with overall program) Learning Outcomes Master Digitally Driven Business. Student does/shows..
..	..	..	..
Develop data queries on a database to explore data to generate insights for organizations	Act on the belief that digital technologies and theories in digital business are continuously evolving **to stakeholder needs**; therefor it's always crucial to continuously adapt or improve in the effort to seek the most appropriate and sustainable solution for business	*Successfully develop a database by following the Agile Scrum Method*	Critically reflect and demonstrate that the most appropriate and sustainable solution for business issues has been found/ designed *Effectively cooperate and contribute to a multidisciplinary development team, applying the Agile way of working*

Table 1: Example of implicit embedding.

The characteristics of explicit embedding are: (A) Focus is, besides product, also on process in development team; (B) Assumes that students are possibly not yet acquainted with Agile Scrum; (C) Grading can be on both product and process features. Process features that are related to Agile Scrum will be in the grading grid and could play a role in computing grades; (D) Enables and stimulates, both formative and summative, feedforward and feedback loops on holistic product and process dynamics. An example of explicit embedding can be seen in Table 2 (again, note that the example is for illustration purposes only). Explicit embedding presumes logically extended grading grids when compared to implicit embedding; see Table 3 for an example.

Learning Objectives Online Data Mining course. Student is able to..	(Alignment with overall program) Learning Objectives Master Digitally Driven Business. Student is able to..	Learning Outcomes Online Data Mining course. Student does/shows..	(Alignment with overall program) Learning Outcomes Master Digitally Driven Business. Student does/shows..
..	..	..	..
Learn to be a modern, esteemed and motivating team worker that systematically uses the dedicated Agile Scrum method (Learning Goal---LG 4)	Proactively and autonomously steer one's **professional effectiveness** in order to be resilient in a continuously changing professional environment	*Successfully work by following the Agile Scrum Method* To be a team worker with whom it is pleasureful to work with who creatively integrates business, technology and data demands	*Effectively cooperate and contribute to a multidisciplinary development team, applying the Agile way of working* Critically reflect on **personal** development of 21st century skills

Table 2: Example of explicit embedding.

GRADED CRITERIA*	1.0 – 3.4	3.5 – 5.4	5.5 – 6.9	7.0 – 8.4	8.5 – 10
Product related features in Team Scrum Log File (90%)---LG 1-3	..	..	..	..	..
Process related features in Team Scrum Log File (10%)---LG 4	Provides no or hardly any reliable evidence to support Agile Scrum	Provides some yet insufficient reliable evidence to support Agile Scrum	Provides enough reliable evidence to support Agile Scrum, but this evidence should have been based more on the dedicated Agile Scrum method	Provides a substantial amount of reliable evidence to support Agile Scrum and this evidence is sufficiently based on the dedicated Agile Scrum method	Provides an exceptional amount of reliable evidence to support Agile Scrum and this evidence is solidly based and possibly extends on the dedicated Agile Scrum method

Table 3: Explicit embedding: grading grid example (for illustration purpose only).
Note that LG 4 relates to the learning goal that has been depicted in Table 2.

Learning analytic pathway directed to product

Figures 1 to 7 illustrate some example results of decomposition, Trello board, Trello board with poker weights, and, comparison of estimated and real poker weights in a sprint review, respectively. Note that the relevance of decomposition, Trello boards and playing poker were already outline before; please see Loke (2020) for any details.
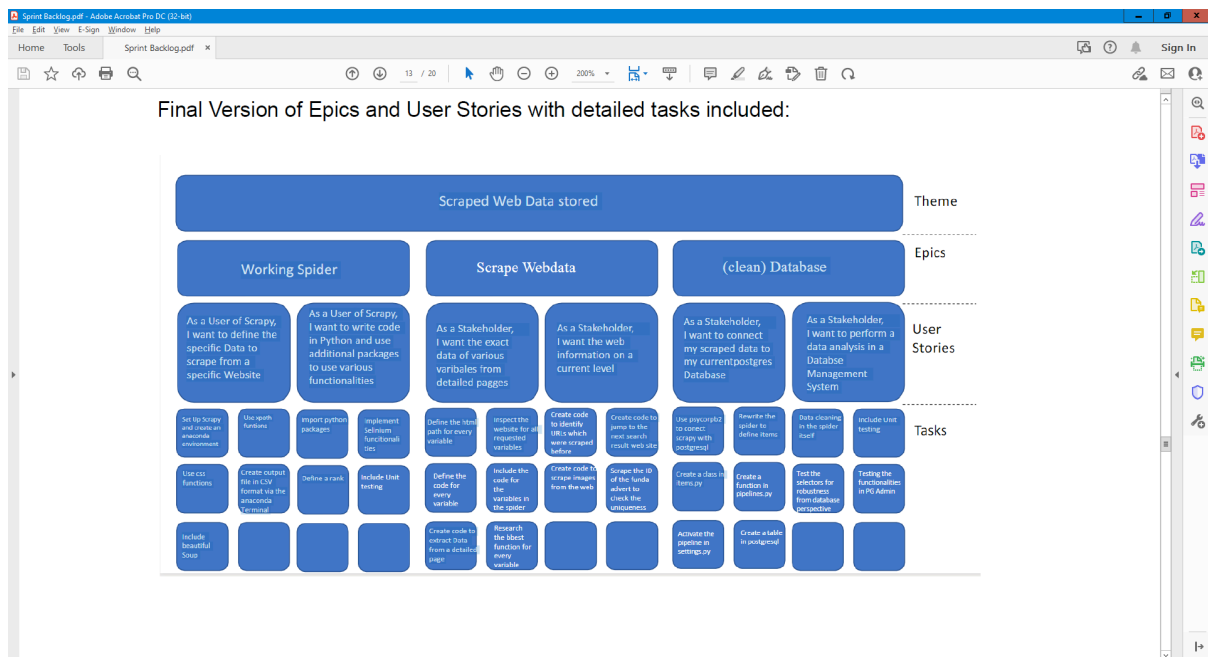
Figure 1: Example processing result for product learning analytic pathway.
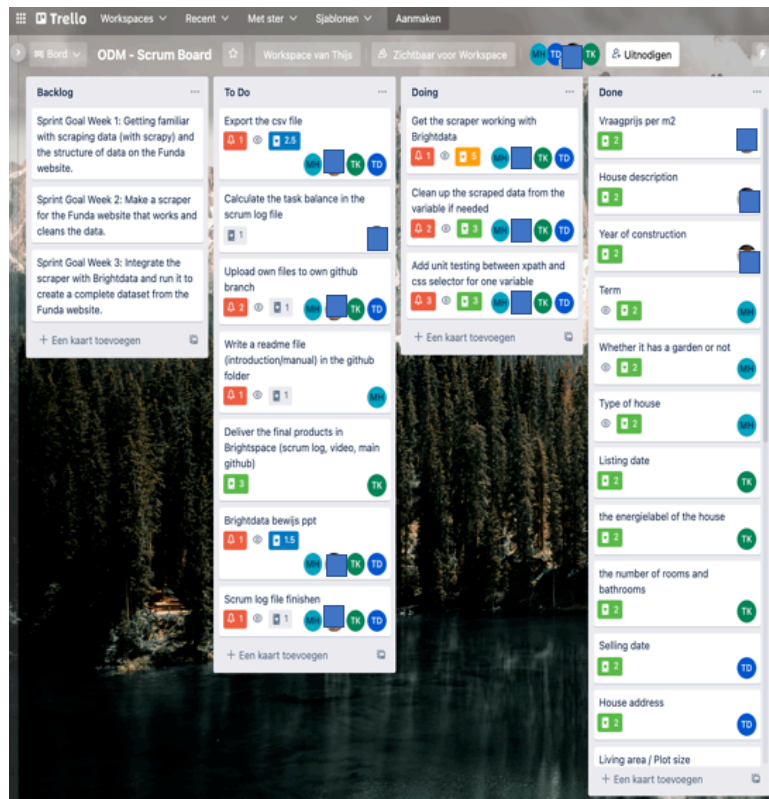
Figure 2: Example processing result for product learning analytic pathway.
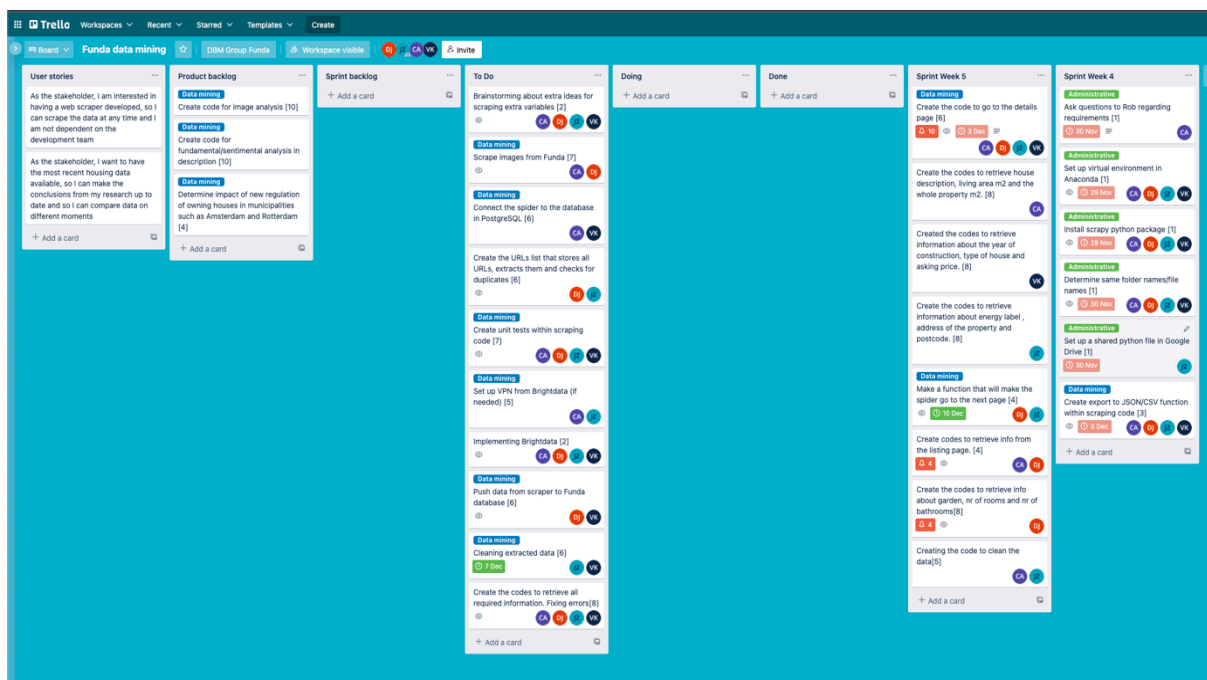
Figure 3: Example processing result for product learning analytic pathway.
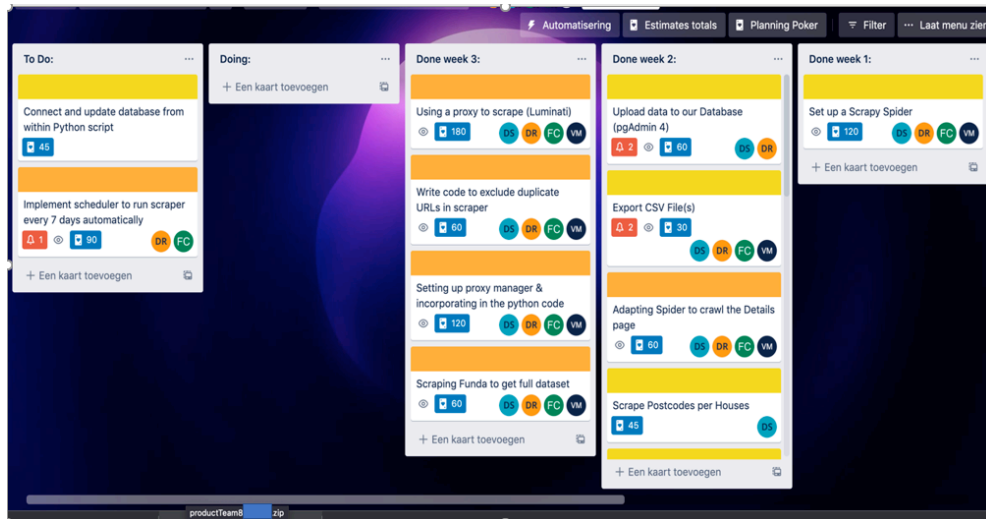
Figure 4: Example processing result for product learning analytic pathway.
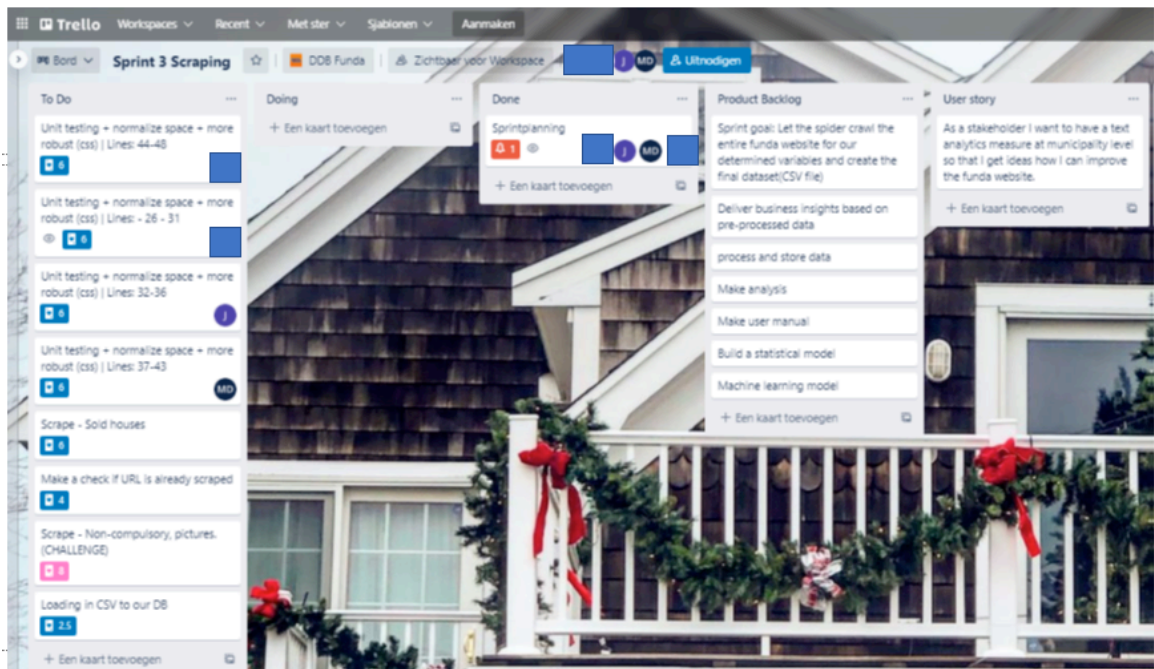
Figure 5: Example processing result for product learning analytic pathway.
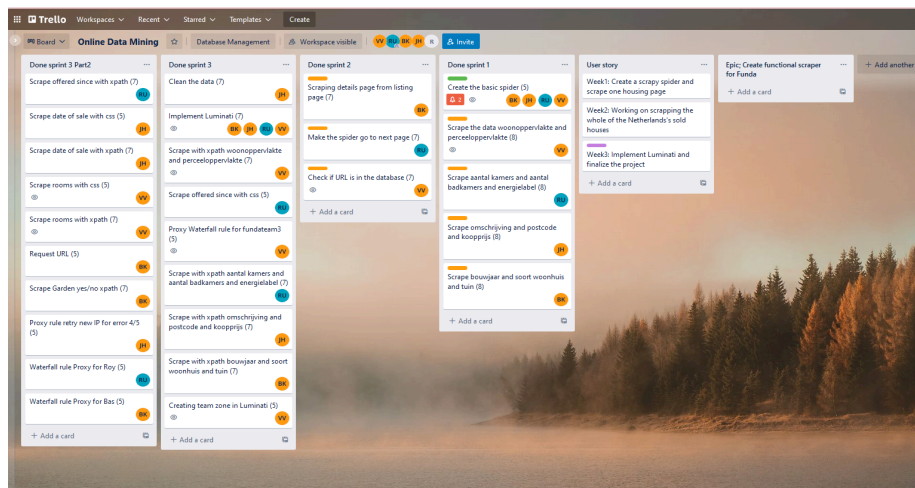
Figure 6: Example processing result for product learning analytic pathway.
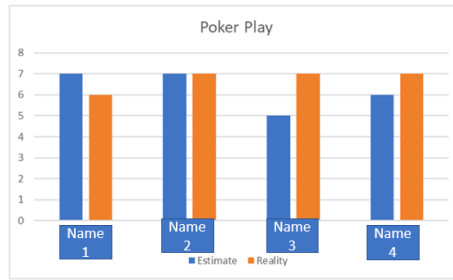
Figure 7: Example processing result for product learning analytic pathway.

Learning analytic pathway directed to process

Figures 8 to 12 illustrate some example results of playing poker during sprint planning, daily standup, and, sprint retrospective, respectively. Please recall from e.g. Schwaber & Sutherland (2020) that these meetings are default when doing scrum.

Figure 8: Example processing result for process learning analytic pathway.

Figure 9: Example processing result for process learning analytic pathway.
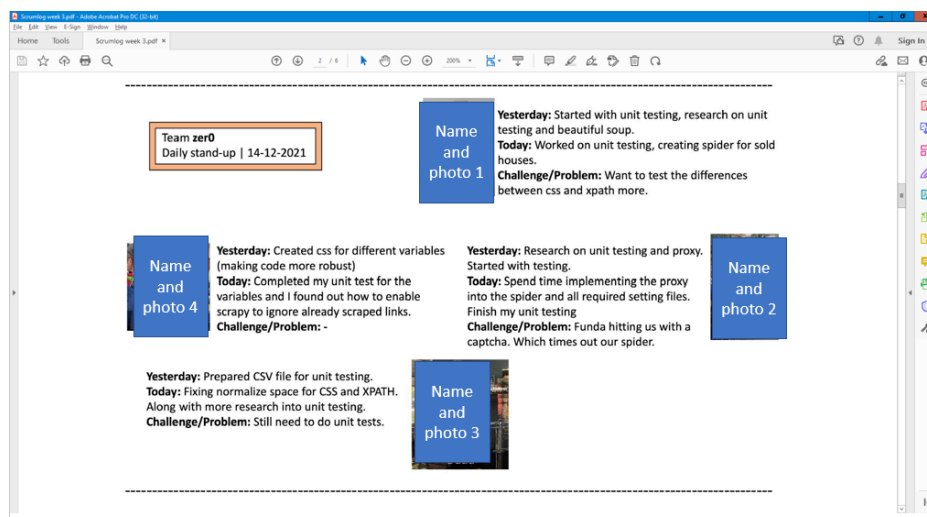
Figure 10: Example processing result for process learning analytic pathway.
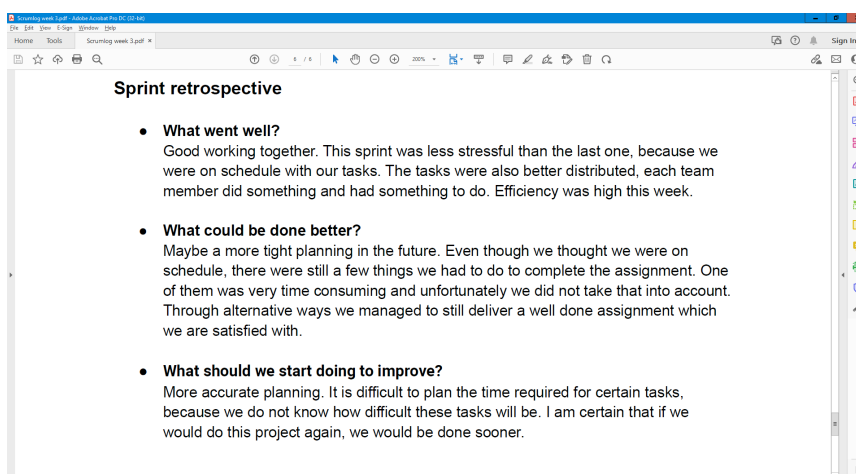
Figure 11: Example processing result for process learning analytic pathway.
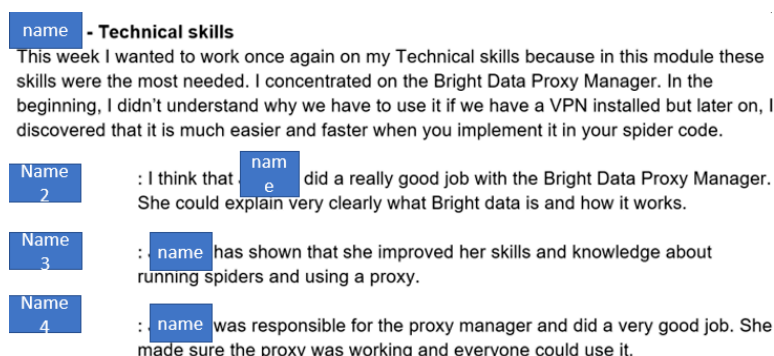
Figure 12: Example processing result for process learning analytic pathway.

Learning analytic pathway directed to setup

Under the assumption that teams are well managed, scrum works best in mixed teams. Therefore, please recall from Loke (2020) that we do automated team formation with computational algorithms to optimise for mixed teams. Obviously, the space that can be formed by all individual student parameters and that can be overlapped/intersected with additional a priori student cluster information as well as allocated group information that has

been computed is a very rich source for computing all kind of learning analytic and class performance measures that should be explored in more depth.

Discussion

The standard as described in Loke (2020) that has been continously applied in the specific expert domain of our master remains in practice highly successfull. The mental map of workload that is a result of the common language of epic, user story and task remains insightful to students during product development. Example processing results per learning analytic pathway are helpful and illustrative for expectation management of rookie agile scrum classes and should form the basis for setting up templates that will be useful for automatic processing purposes (product and process pathway). Setup parameters that are derived from the student population are important to drive automated team formation to maximize overall class diversity in teams that is known to increase agile scrum impact in class (setup pathway).

Recommendations

Introducing scrum into your organization is not trivial. Introducing scrum as a learning paradigm is not trivial either and it takes time for lecturers and students to get familiar with it (as is the case in starting with scrum in the real work field as well).

We have described the most relevant design option when doing agile scrum team work in education that you should address and think of when you develop your course. Explicit specification of agile scrum into learning objectives and outcomes is better for rookie agile scrum classes. Implicit specification could be better for expert agile scrum classes.

It would be interesting to see application of our standard in the education community. The standard can be applied to other expert domains, in other university studies, by other universities and education institutes, in other countries and in other languages. When you apply our new standard in your own work, please refer to this new paper and/or our Loke (2020) paper.

Conclusion

We promote a symbiotic world where education can take place with scrum directly in the professional work field. With this aim in mind, we extended in this paper our standard for doing scrum team work (Loke, 2020) with three learning analytic pathways that should be explored in the near future to boost overall learning efficiency and efficacy and to drive potential learning dashboards, recommender systems or chatbots.

Acknowledgements

Insights; in particular, Riccardo Pinosio for running courses together and Frederik Situmeang for setting up courses together.

References

Loke, R.E. (2020). A New Standard for Doing Agile Scrum Team Work in Education. ECE2020, European Conference on Education: https://papers.iafor.org/wp-content/uploads/papers/ece2020/ECE2020_57991.pdf (see also https://vimeo.com/438418681).

Schwaber, K. & Sutherland, J. (2017). The Scrum Guide: The Definitive Guide to Scrum: The Rules of the Game. URL: https://www.scrum.org/resources/what-is-scrum.

Schwaber, K. & Sutherland, J. (2020). The Scrum Guide: The Definitive Guide to Scrum: The Rules of the Game. URL: https://scrumguides.org/scrum-guide.html#scrum-definition.

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The Relationship Between Cognitive Linguistic Approach and Right-Hemisphere of the Brain in Developing EFL Learners' Pragmatic Proficiency

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Abstract

The present study explored how the metaphor awareness-raising approach affects the involvement of the right hemisphere in developing EFL learners' knowledge regarding the different degrees of politeness embedded within different request expressions. The study results show that the metaphor awareness-raising group performed significantly better than the control group with regard to acceptability judgment and speaking tests at post-test. These data revealed that the metaphor awareness-raising approach could promote L2 learning because it aided input enhancement and concept projection; through these aspects, the participants were able to comprehend an abstract concept: the degree of politeness in terms of the spatial concept of distance. Accordingly, the proximal-distal metaphor enabled the study participants to connect the newly spatio-visualized concept of distance to the different politeness degrees attached to different request expressions; furthermore, they could recall them with the left side of the mouth being wider than the right. This supported certain findings from previous studies that indicated the possible involvement of the brain's right hemisphere in metaphor processing.

Keywords: Metaphor Awareness-Raising, Proximal-Distal Metaphor, Right Hemisphere, Left-Hemisphere, L2 Politeness, Mouth Asymmetry

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Introduction

Acquiring and using language, one of the most sophisticated human achievements, is a vital part of human life. Among the various theories concerning language acquisition, cognitive linguistic theories underscore the fact that the best acquisition and use of language recognizes that it reflects general cognitive processes and involves the unique ways through which humans experience and interact with the physical world. Lakoff and Johnson (2003) and Grady (1999) argued that many embodied concepts can be extended to encompass more abstract concepts and we can therefore comprehend certain abstract concepts with regard to the embodied concepts. This process—conceptual projection—forms the basis of conceptual metaphor theory (CMT) (Lakoff & Johnson, 2003). For instance, in the conceptual and theoretical metaphor LIFE IS A JOURNEY, we conceptualize *life* compared with *journey*. Grady (1997) proposed primary metaphors, whose conceptual projections connect objective and subjective experiences, and argued that humans tend to distinctly and simplistically perceive the physical world as a framework for understanding another distinct simple target concept. For example, oftentimes, we witness a scene where the quality of an entity may increase incrementally, and we may also perceive that the height of the entity has increased. Thus, this "quantity" is understood metaphorically based on verticality.

Lakoff and Johnson (2003) suggested that when we understand and experience one kind of a thing in terms of another based on spatial concepts, we metaphorically map the embodied concepts onto the non-embodied concepts and thus maintain long-term memory; this, in turn, could be considered as an involvement of the brain's right hemisphere. The brain is divided into two cerebral hemispheres: left and right. The left side of the brain, which controls the right side of the body, is considered to be the superior verbal and analytical processor. The right side of the brain controls the left side of the body with a focus on non-verbal visual-spatial skills.

The present study was motivated by theoretical considerations regarding the conceptual projection and metaphorical idea of POLITENESS IS DISTANCE, as proposed by Panther and Thornburg (2003); this study applied these considerations to develop Japanese learners' knowledge regarding the different politeness degrees and to explore the connection between the metaphorical concept projection and right-hemisphere dominance. Japanese EFL learners do not know certain language strategies (e.g., English requests can be mitigated with biclausal downgraders including the if-clause with past-tense modal verbs) and have difficulty adjusting the politeness degrees attached to request expressions according to situations.

Based on CMT and Japanese EFL learners' tendencies, such learners' conceptualizations about politeness degrees embedded in English request expressions may not be deeply entrenched in their knowledge of spatial relations. Accordingly, this study utilized spatial relations to make politeness degrees easier to learn and attempted to find the connection (if any) between the metaphor awareness-raising approach and right-hemisphere dominance activation.

Research on teaching L2 pragmatics and spatial concept application

Many past studies have treated speech acts—requests in particular—as target pragmatic features (Alcón-Soler, 2013; Harlenko & Jones, 2011; Nguyen, 2013; Q. Li, 2012; S. Li, 2013). Additionally, most of the empirical studies investigated whether second language (L2)

learners could identify and use appropriate pragmalinguistic realization patterns according to the given situation, while L2 learners' sociopragmatic knowledge was assessed primarily based on whether they could make a correct linguistic selection based on social variables under each given context. This emphasis on the pragmalinguistic aspects rather than the sociopragmatic domain influenced L2 learners' learning outcomes.

To assist L2 learners in interconnecting the pragmalinguistic and sociopragmatic aspects of a pragmatic target equally, Littlemore (2009) explained that embodied cognition that utilizes the spatial conceptualizations helps L2 learners internalize those two aspects of the pragmatic target and also acquire the concept of politeness. Similarly, Littlemore and Low (2006) emphasized the use of the primary metaphor to familiarize learners with the use of different politeness degrees according to contexts. To date, very few studies have adopted the primary metaphor for exploring the efficacy of the metaphor awareness-raising approach (Takimoto, 2020; Tyler, Mueller, & Ho, 2010).

Tyler et al. (2010) examined how the metaphor awareness-raising approach influenced the teaching of English modal verbs among EFL learners at a university in the US. Furthermore, Takimoto (2020) utilized spatial concepts to improve Japanese EFL learners' pragmatic proficiency regarding politeness degrees in making requests. The two studies' results show that the metaphor awareness-raising approach is more effective than the non-metaphor awareness-raising approach; however, associations between the efficacy of the spatial concept-oriented metaphor awareness-raising approach and right-hemisphere dominance was not investigated and remains under-researched. Therefore, the present study aims to identify the causes of the effectiveness of spatial concept-oriented metaphor awareness-raising approaches through a neuroscientific perspective.

Left and right-hemisphere involvement in metaphor processing

Many cognitive neuroscience studies utilize neuroimaging and electrophysiological techniques to investigate the relationship between first language (L1) metaphor processing and hemispheric lateralization. Some studies have shown greater right-hemisphere involvement in metaphor comprehension (Ahrens, Liu, Lee, Gong, Fang, & Hsu, 2007; Cardillo, Watson, Schmidt, Kranjec, & Chatterjee, 2012; Faust & Mashal, 2007; Mashal, Faust, & Hendler, 2005; Schmidt, DeBuse, & Seger, 2007); others failed to demonstrate preferential right-hemisphere metaphor processing (Benedek, Beaty, Jauk, Koschutnig, Fink, Silvia, Duns, & Neubauer, 2014; Rapp, Leube, Erb, Grodd, & Kircher, 2007; Stringaris, Medford, Giampietro, Brammer, & David, 2007).

The aforementioned studies differ methodologically in terms of data-gathering methods, task selection, and stimulus selection in cognitive neuroscience studies and these differences may have produced mixed results regarding the right-hemisphere hypothesis for metaphor processing. Additionally, most of the studies examined left and right-hemisphere roles in metaphor comprehension processing rather than metaphor production processing. Both hemispheres' contributions to metaphor production rather than comprehension should be explored further.

To examine each hemisphere's relative involvement in metaphoric production, real-time inspection should be conducted during actual speech production; to gain the end of real-time inspection, measurement of mouth asymmetry may be suitable. Accordingly, several studies (Argyriou & Kita, 2013; Argyriou, Byfield, & Kita, 2015) have measured mouth asymmetry

to analyze the relation between real-time speech production and left and right-hemisphere contributions.

Mouth asymmetry measurement has been utilized because speech articulation, normally controlled mainly by one side of the brain, causes muscles on the opposite side of the mouth to move more during speech production (Graves & Landis, 1990; Adams, Victor, & Ropper, 1997). Studies by Argyriou and Kita (2013) and Argyriou et al. (2015) proved that, compared with neuroimaging and electrophysiological techniques, which confine participants in small spaces that physically restrain any free movement, mouth asymmetry techniques can identify relative involvement from each hemisphere when participants' movements are less unrestrained. Additionally, mouth asymmetry techniques are non-invasive, inexpensive, and less time-consuming for locating different real-time hemispheric involvements during actual speech production.

Nevertheless, this technique has not been applied for identifying relative hemispheric involvements in L2 metaphorical speech production. Therefore, considering the still under-researched area of hemispheric involvement in L2 speech production, we must further explore whether visualizing instructional content based on spatial concept-based metaphor awareness-raising approaches could assist in enhancing right-hemisphere involvement, thus facilitating the acquisition of L2 politeness.

The present study pursued the findings of Takimoto (2020); thus far, no studies have probed how metaphor awareness-raising approaches affect teaching different degrees of L2 politeness as well as right-hemisphere involvement. To address this gap, this study investigated the following research question:

How do metaphor awareness-raising approaches influence right-hemisphere involvement in developing EFL learners' knowledge of different politeness degrees attached to request expressions?

Research methodology

Participants

The study participants were monolingual Japanese speaking students from a Japanese university (57 right-handed participants) belonging to two intact classes. They had majored in science and engineering and had been learning English as a foreign language for eight years in Japan. Their average age was 20 years old and their English proficiency level was the intermediate level.

Target expressions

Following Takimoto's study (2020), the present study utilized the POLITENESS IS DISTANCE metaphor to examine the teaching of biclausal downgraders in English requests invoking hypotheticality. The list of biclausal downgraders in Table 1 is based on those adopted by Takimoto (2020). Two native speakers of English (from New Zealand and Great Britain) confirmed a list of request strategies and ensured directness among these strategies.

Table 1. List of request strategies

		Strategy	Example
CASUAL REQUESTS ORIGINATING IN REAL SPACE	1.	Mood derivable	*(Please) clean my room.*
	2.	Preparatory question	*Can you clean my room?*
		Permission question	*Can I borrow your pen?*
POLITE REQUESTS ORIGINATING IN HYPOTHETICAL SPACES	3	Mitigated-preparatory question	*Could (Would) you clean my room?*
		Mitigated-permission question	*Could I borrow your book?*
	4	Biclausal mitigated-want statement	*I would appreciate it if you could clean my room.*
	5	Biclausal mitigated-preparatory statement	*I wonder if you could clean my room.*
		Biclausal mitigated-permission statement	*I wonder if I could borrow your book.*
	6	Biclausal mitigated-preparatory question	*Would it be possible for you to clean my room?*
		Biclausal mitigated-permission question	*Would it be possible for me to borrow your book?*

Note: 1 = most direct ~ 6 = least direct

Brown and Levinson (1987) suggested that the amount and type of politeness was determined by three social context variables: (a) *power*, the speaker's relative social status compared with that of the hearer; (b) *closeness*, between the speaker and the hearer; and (c) *speaker difficulty*, experienced by the speaker when asking the hearer to perform a speech act. Accordingly, different politeness degrees based on the different degrees of these social variables were used and evenly reflected in the instructional and testing materials.

Learning treatments

A single instructor (who was a researcher) conducted complete learning sessions on Zoom in Japanese once a week for two weeks. The treatment and control groups attended a 30-minute learning session consisting of teacher-directed computer-based learning. During these sessions, they received no feedback.

The metaphor awareness-raising approach group's computer-based learning included these components: (a) using computers to observe an illustration about English requests, which was based on the POLITENESS IS DISTANCE metaphor, for 10 minutes with the instructor's metapragmatic information and (b) engaging in problem-solving tasks for 20 minutes. However, the control group's computer-based learning included these components: (a) using computers to observe a list of English requests for 10 minutes with the instructor's metapragmatic information and (b) engaging in problem-solving tasks for 20 minutes.

Testing instruments and procedures

The present study used a pre/post-test design to reaffirm the efficacy of the cognitive technique and its connection to right-hemisphere involvement. The pre-test was administered a week before the first learning session, and the post-test was administered a week after the second learning session. The present research did not administer the delayed post-test because it emphasized determining whether metaphor awareness-raising approaches for developing EFL learners' pragmatic proficiency entailed right-hemisphere activation.

Each test contained an acceptability judgment test (AJT) along with a speaking test in the post-test. Two different AJT versions were developed to minimize the test learning effects. The post-test commenced with the speaking test followed by the AJT because of concerns that the AJT might provide the participants with some hints about the speaking test. The participants were given five minutes each to complete the AJT and the speaking test. The AJT was administered online through a learning management system; the speaking test was conducted online individually through Zoom.

Acceptability judgment test

The present study adopted the AJTs from Takimoto's study (2020); these required participants to read about 18 situations in English. After this reading, participants were required to assess each request based on the degree of perceived acceptability on an 11-point scale and then instructed to select the most appropriate request form. Their ratings were compared with English native speakers' baseline data. When a given participant's scores matched appropriately with English native speakers' baseline data, five points were assigned to a participant. The test contained 18 items with a maximum score of 90.

Speaking Test

The speaking test was conducted online on a one-on-one basis through Zoom. During the test, participants had to sit right in front of the computer screen and keep both hands still on their computer tables. The researcher and participants faced each other through the computer screen, and the researcher video-recorded participants' responses in "Active Speaker View" mode through Zoom. The participants had to make an oral request in English under a given situation. They were assigned three situations before the speaking test; following this, they received consecutive situation numbers (e.g., Situation 1, Situation 2, and Situation 3) on an individual white paper sheet (72 font size) from the researcher, who continued holding this paper until the participant started making requests in English. After the video recording, the researcher transcribed the participants' responses, and two native English speakers (from Britain and New Zealand, respectively) scored the transcribed participants' requests on a 5-point scale based on their appropriateness for each situation. The test contained three situations including two highly imposed situations and one low imposed situation (maximum score: 15). One highly imposed speaking-test sample situation was as follows:

Situation 1: You are writing a difficult paper for Professor Hill. You need some help with the paper, but Professor Hill is away for a month. A friend of yours has suggested you go and see Professor Watson. Although you do not know Professor Watson, and Professor Watson is extremely busy, you have decided to ask Professor Watson to look through your long

paper before you hand it in the next day. What would you ask Professor Watson? Please start speaking now.

  You:_____

_____

Results

The AJT scores (scored by the researcher) and the speaking-test scores (evaluated by two English native speakers) were analyzed using SPSS Version 27.0 (IBM Corp, 2020). The participants' transcribed speaking-test request expressions were further analyzed using AntConc 3.5.7 (Anthony, 2018).

Descriptive statistics and statistical analysis assumptions

The participants' performances in the treatment and control groups regarding the pre-test and the post-test of each testing instrument are indicated using the number of participants (n), mean (M), and standard deviation (SD) for each case (Table 2).

Table 2. Descriptive statistics for two testing instruments

	Acceptability Judgment Test			Speaking Test				
Time	Treatment	n	M	SD	Time	Treatment	n	M	SD
Pre	MR	30	39.17	14.92					
	Control	27	31.67	18.03	N/A				
	Total	57	35.63	16.75					
Post	MR	30	67.33	22.04	Post	MR	28	15.00	0.00
	Control	27	39.63	12.85		Control	29	11.24	3.97
	Total	57	54.21	22.087		Total	57	13.09	3.39

Note: MR = metaphor awareness-raising approach; Pre = pre-test; Post = post-test

Acceptability judgment and speaking tests

The two-way repeated-measures ANOVA results for the acceptability judgment test indicated a significant main effect on Instruction (F [1, 55] = 25.13, p = .000 < .001, ηp^2 = .314) and Time (F [1, 55] = 36.39, p = .000 < .001, ηp^2 = .398). No significant interaction effects were observed between Instruction and Time: F (1, 55) = 11.38, p = .001, ηp^2 = 11.38. Furthermore, the results of the independent-measures t-test for the speaking test disclosed a significant main effect on Instruction: t (55) = 15.21, p < .001, d = 1.10.

Mouth asymmetry analysis

Recordings of participants' mouth opening were analyzed using a two-dimensional motion analysis software (Move-tr/2D, Library Inc., Tokyo, Japan). It processed participants' mouth movements on a scene-by-scene (1/25 second) basis during the participants' responses; only scenes of participants' using target words were analyzed. The mouth asymmetry analysis encompassed 2,901 scenes (935 scenes for *requesting help with a paper*, 667 scenes for *borrowing a smartphone*, and 1299 scenes for *requesting a makeup exam*) for the metaphor awareness-raising approach group and 2,743 scenes (962 scenes for *requesting help with a*

paper, 795 scenes for *borrowing a smartphone*, and 986 scenes for *requesting a makeup exam*) for the control group.

Using the first recording scene as the basis, the center of the participant's forehead (Point 1 in Figure 1) was fixed as the reference point. Based on the reference point and the tip of the nose (Point 2 in Figure 1), the vertical axis on the coordinates was determined. Then, using the vertical axis as the reference axis, the left end (Point 4 in Figure 1) and the right end of the mouth (Point 3 in Figure 1) were set as measurement points, and the horizontal axis was determined using these coordinates. Comparative coordinate conversion was performed on the recordings after the basic scenes were completed. Namely, using the reference point, the coordinates were converted as (x, y) = (0, 0), and it was assumed that the reference axis connecting the reference point and the nose tip was immobile. The coordinate displacements of measurement points 3 and 4 were calculated based on the reference axis. The present study defined mouth asymmetry as right-sided mouth asymmetry (the left side of the mouth opens wider than its right side) or left-sided mouth asymmetry (the right side of the mouth opens wider than its left side).
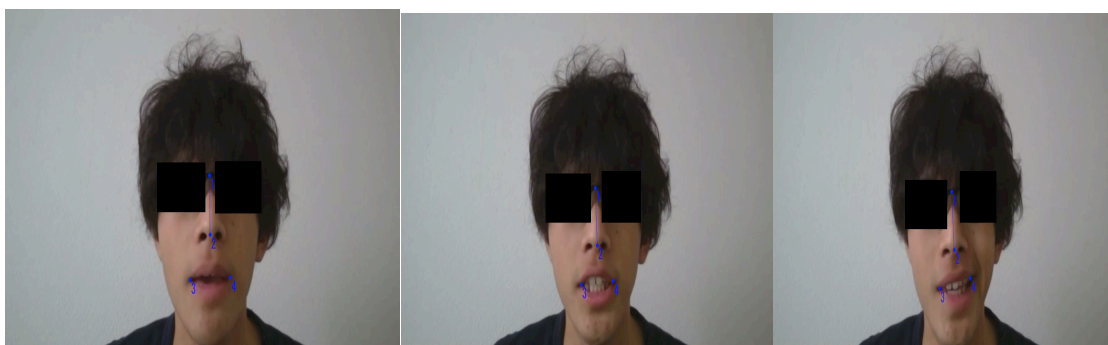
Figure 1: (From left to right). Examples of right-sided mouth asymmetry maximum mouth opening, equal mouth opening, and left-sided mouth asymmetry maximum mouth opening

First, this study analyzed whether the right-sided and left-sided mouth-opening widths differed in the metaphor awareness-raising approach and control groups. Significant differences in the left-sided mouth-opening width (L) and the right-sided mouth-opening widths minus the left-sided mouth-open widths (R-L) for *requesting help with a paper*, *borrowing a smartphone*, and *requesting a makeup exam* were observed through two independent-measures *t*-tests (no significant differences were observed in the right-sided mouth-opening width [R]) (Table 3). Second, the study ran two paired-samples *t*-tests to locate where the differences in L and R could be found. Statistical analysis indicated significant differences between the L and R, with L being wider than R in the metaphor awareness-raising approach group: $t(29) = -3.57$, $p < .01$, $d = 1.78$ for *requesting help with a paper*, $t(29) = -5.67$, $p < .01$, $d = 1.50$ for *borrowing a smartphone*, and $t(29) = -6.45$, $p < .01$, $d = 1.19$ for *requesting a makeup exam*. However, while significant differences were also observed between L and R in the control group, unlike the metaphor awareness-raising approach group, these results indicated that the participants' R was wider than their L: $t(26) = 3.25$, $p = .003$, $d = .96$ for *requesting help with a paper*, $t(26) = 2.77$, $p = .010$, $d = .68$ for *borrowing a smartphone*, and $t(26) = 2.90$, $p = .007$, $d = 1.05$ for *requesting a makeup exam*).

In summary, significant differences were observed in L and R between the metaphor awareness-raising approach and control groups, and the metaphor awareness-raising approach group's L was significantly wider than the R. This provided some evidence that the metaphor awareness-raising approach group's right-hemisphere involvement may have increased the

left-side bias for mouth openings during the participants' metaphorical processing of the target request expressions that they used. However, it could be hypothesized that, within the control group, the participants' left-hemisphere dominance may have increased the right-side bias for mouth openings when they were producing target request expressions.

Table 3. Right- and left-sided mouth-opening widths and the difference between them during target request production

	Treatment	Mean	SD	*t*	*p*	*d*
RH R	MR	1.63	1.71	.23	.818	1.46
	Control	1.54	1.11			
RH L	MR	2.79	1.33	6.71	.000	1.07
	Control	.60	.96			
RH R-L	MR	-1.16	1.78	-4.57	.000	1.45
	Control	.12	1.73			
BS R	MR	1.26	1.10	-1.66	.103	1.05
	Control	1.72	.98			
BS L	MR	2.81	1.64	3.81	.000	1.44
	Control	1.36	1.17			
BS R-L	MR	-1.56	1.50	-6.31	.000	1.19
	Control	-.36	.68			
RM R	MR	1.00	1.10	-1.96	0.55	.94
	Control	1.49	.73			
RM L	MR	2.40	1.36	5.23	.000	1.11
	Control	.90	.74			
RM R-L	MR	-1.40	1.19	-6.65	.000	1.12
	Control	.59	1.05			

Note: R=right-sided mouth-opening width; L= left-sided mouth-opening width; R-L= R minus L; RH = *requesting help with a paper*; BS = *borrowing a smartphone;* RM = *requesting a makeup exam*; MA = metaphor awareness-raising approach

Discussion and conclusion

This study analyzed how metaphor awareness-raising approaches affected right-hemisphere involvement in developing EFL learners' knowledge of different politeness degrees embedded in different request expressions. The results showed that the metaphor awareness-raising group performed significantly better than the control group on acceptability judgment and speaking tests at post-test. These data showed that the proximal-distal metaphor enabled participants to connect spatial visualized conceptualizations of distance to different politeness degrees attached to different request expressions and recall them with wider left-sided mouth openings than the right, thereby supporting previous studies' findings (Argyriou & Kita, 2013; Argyriou, Byfield, & Kita; 2015) about possible right-hemisphere involvement in metaphor processing.

Two possible factors may have improved the effectiveness of the metaphor awareness-raising approach regarding possible right-hemisphere involvement. The first concerns the conceptual projection between distance (a spatial concept) and politeness (the target concept). The metaphor awareness-raising approach group engaged in concept projection, through which participants managed to understand an abstract concept—the degrees of *closeness*, *power*, and *speaker difficulty*—in terms of spatially visualized concepts such as NEAR–FAR and HIGH–LOW; this was accompanied by right-hemisphere involvement. However, rather than concept projection, the control group was required to learn a list of request expressions by rote, and this may have reduced right hemisphere dominance (Graves & Landis, 1990; Lindell, 2006).

Another reason for the effectiveness of the metaphor awareness-raising approach may be the participants' lack of familiarity with the concept of embedding politeness in request expressions. During the speaking test, the metaphor awareness-raising approach group engaged in metaphorical concept mapping with regard to spatially visualized concepts such as NEAR–FAR and HIGH–LOW, connecting them to the concept of politeness degrees: *closeness*, *power*, and *speaker difficulty*. This specific metaphorical cross-domain mapping was part of the participants' efforts to bring two distant concepts closer together to identify differences in the politeness degrees between the request expressions.

According to Beeman's Fine Coarse Coding theory (Beeman, 1998), right hemisphere processing activates distantly associated concepts and peripheral aspects of meanings and simultaneously maintains multiple meaning activations, whereas left-hemisphere processing selects and maintains activations of closely associated concepts and central aspects of meanings. In short, metaphorical expressions with a low degree of familiarity (for example, politeness levels) will be handled by the right hemisphere, while literal expressions with a high degree of familiarity will be handled by the left hemisphere.

Regarding follow-ups on the current findings, profound results could be obtained through future studies that delve into the effects of the metaphor awareness-raising approach on relative right and left-hemisphere involvement in EFL learners' metaphoric production processing. It may be beneficial to conduct further analyses on spatial-oriented metaphor awareness-raising approaches by using a neuroscientific angle; this could provide fellow researchers and teachers with more insights that will help them develop optimum instructional methods for teaching L2 abstract concepts in an EFL context.

References

Adams, R. D., Victor, M., & Ropper, A. H. (1997). Principles of neurology (6th ed.). New York, NY: McGraw-Hill.

Alcón-Soler, E. (2013). Teachability and bilingual effects on third language knowledge of refusals. *Intercultural Pragmatics*, *9*, 511–541.

Anthony, L. (2018). *AntConc* 3.5.7: Waseda University.

Ahrens, K., Liu, H. L., Lee, C. Y., Gong, S. P., Fang, S. Y., & Hsu, Y. Y. (2007). Functional MRI of conventional and anomalous metaphors in Mandarin Chinese. *Brain and Language, 100*, 163–171.

Argyriou, P., & Kita, S. (2013). The effect of left-hand gestures on metaphor explanation. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *The 35th annual conference of the cognitive science society* (pp. 1762–1767). Berlin and Austin, TX: Cognitive Science Society.

Argyriou, P., Byfield, S., & Kita, S. (2015). Semantics is crucial for the right-hemisphere involvement in metaphor processing: Evidence from mouth asymmetry during speaking. *Laterality: Asymmetries of Body, Brain, and Cognition*, *20*, 191–210.

Beeman, M. (1998). Coarse semantic coding and discourse comprehension. In M. Beeman & C. Chiarello (Eds.), *Right hemisphere language comprehension: Perspectives form cognitive neuroscience* (pp. 255-284). Mahwah, NJ: Lawrence Erlbaum.

Benedek, M., Beaty, R., Jauk, E., Koschutnig, K., Fink, A., Silvia, P. J., & Neubauer, A. C. (2014). Creating metaphors: The neural basis of figurative language production. *NeuroImage, 90*, 99–106.

Brown, P., & Levinson, S. (1987). *Politeness: Some universals in language usage*. Cambridge University Press.

Cardillo, E. R., Watson, C. E., Schmidt, G. L., Kranjec, A., & Chatterjee, A. (2012). From novel to familiar: Tuning the brain for metaphors. *NeuroImage, 59,* 3212–3221.

Faust, M., & Mashal, N. (2007). The role of the right cerebral hemisphere in processing novel metaphoric expressions taken from poetry: A divided visual field study. *Neuropsychologia, 45*, 860–870.

Grady, J. (1997). *Foundations of meaning: primary metaphors and primary scenes*. Doctoral thesis, University of California, Berkeley.

Graves, R., & Landis, T. (1990). Asymmetry in mouth opening during different speech tasks. *International Journal of Psychology*, *25*, 179–189.

Halenko, N., & Jones, C. (2011). Teaching pragmatic awareness of spoken requests to Chinese EAP learners in the UK: Is explicit instruction effective? *System, 39*, 240–250.

IBM Corp. (2020). *IBM SPSS Statistics for Windows, Version 27.0.* Armonk, NY: IBM Corp.

Lakoff, G. & Johnson, M. (2003). *Metaphors we live by*. Chicago: The University of Chicago Press.

Li, Q. (2012). Effects of instruction on adolescent beginners' acquisition of request modification. *TESOL Quarterly, 46*, 30–55.

Li, S. (2013). Amount of practice and pragmatic development of request-making in L2 Chinese. In Taguchi, N. & Sykes, J.M. (eds.), *Technology in interlanguage pragmatics research and teaching* (pp. 43–70). John Benjamins.

Lindell, A. K. (2006). In your right mind: Right hemisphere contributions to language processing and production. *Neuropschology Review*, *16*, 131–148.

Littlemore, J. (2009) Applying cognitive linguistics to second language learning and teaching. New York: Palgrave Macmillan.

Littlemore, J., & Low, G. (2006). Figurative thinking and foreign language learning. New York: Palgrave Macmillan.

Mashal, N., Faust, M., & Hendler, T. (2005). The role of the right hemisphere in processing nonsalient metaphorical meanings: Application of principal components analysis to fMRI data. *Neuropsychologia, 43*, 2084–2100.

Nguyen, T. (2013). Instructional effects on the acquisition of modifiers in constructive criticisms by EFL learners. *Language Awareness 22*, 76–94.

Panther, K., & Thornburg, L. (2003). Metonymies as natural inference and Activation schemas. In K. Panther, & L. Thornburg (Eds.), *Metonymy and pragmatic inferencing* (pp.127-147). Amsterdam/Philadelphia: John Benjamins.

Rapp, A. M., Leube, D. T., Erb, M., Grodd, W., & Kircher, T. T. J. (2007). Laterality in metaphor processing: Lack of evidence from functional magnetic resonance imaging for the right hemisphere theory. *Brain and Language, 100*(2), 142–149.

Schmidt, G. L., DeBuse, C. J., & Seger, C. A. (2007). Right hemisphere metaphor processing? Characterizing the lateralization of semantic processes. *Brain and Language, 100*(2), 127–141.

Stringaris, A. K., Medford, N. C., Giampietro, V., Brammer, M. J., & David, A. S. (2007). Deriving meaning: Distinct neural mechanisms for metaphoric, literal, and non-meaningful sentences. *Brain and Language, 100*, 150–162.

Takimoto, M. (2020). Investigating the effects of metaphor awareness-raising approach in developing EFL learners' pragmatic proficiency. *System, 89*, Elsevier, 102213.

Tyler, A., Mueller, C., & Ho, V. (2010). Applying cognitive linguistics to instructed L2 learning: The English modals. *AILA Review, 23*, 30

The Impact of the COVID-19 Pandemic on the Mental Health and Professional Performance of Teachers

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Abstract
The COVID-19 pandemic is associated with highly significant levels of psychological distress that, in many cases, would meet the threshold for clinical relevance of helping professions - occupations in the fields of psychology, psychiatry, counseling, medicine, nursing, social work, physical and occupational therapy, teaching, and education. Mitigating the hazardous effects of COVID-19 on mental health is a public health priority. The aim of our research was to analyze our experience with this topic and attitudes of teachers to the online teaching during the COVID-19 pandemic.

Keywords: Teachers, Online Teaching, COVID-19 Pandemic

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Introduction

People in constant, prolonged, intensive interaction with other people in an emotionally charged atmosphere are susceptible to the syndrome of burnout [5]. Since November 2019, population of the Czech Republic went through different quarantine phases, passing through border closures, social distancing, and the suspension of presential teaching activities overtaken by virtualization. Schools were closed for almost a year which was one of the longest breaks in the EU.

Well-being of most people including teachers was affected in many countries as it was reported by several studies [2, 3, 4]. In this regard, although efforts have been made to train teachers through online learning platforms, this modal change implied a series of challenges when developed in a hostile, complex and unprecedented context [6]. Experts in clinical psychology expect, it will be necessary to re-develop sustainable work environments and policies, which will provide well-being to teachers in different aspects (social, emotional, physical). This effort will have to be reflected not only in the improvement of their productivity—even in extreme situations, as is the case of job development during the COVID-19 pandemic, it will also help to prevent pathologies associated with the teaching function, such as burnout due to prolonged exposures of stress.

Online teaching transition during COVID-19 school lockdown elicited new situations and challenges for teachers and schools across the globe as remote teaching introduction brought new stressors for teachers. Our own experience inspired us to study feelings and attitudes of teachers towards distant online teaching and possible stressors connected with it (necessity to learn new methods and demands of preparation for distant teaching) and occurrence of the Burnout Syndrome and its specific features within the teacher community. The study was conducted in December 2020 and January 2021.

Objective

The aim of our research was to analyze experience and attitudes of teachers to the online distant teaching during the COVID-19 pandemic and to confront them with the results of their discomfort level as measured by the Maslach Burnout Inventory.

Methods

We used quantitative research method: a questionnaire designed for this purpose was divided into 4 sections (personal data specification, teacher attitudes towards online teaching, teacher opinions on Burnout Syndrome formation and its diagnostics as measured by the standardized Maslach Burnout Inventory).

Research Sample

337 elementary school teachers (92 % female, 8 % male) and 155 secondary school teachers (83 % female, 17 % male) participated in our study. We used the teacher Facebook platform to address potential survey respondents. As seen on Table 1, the age of respondents covered the whole range of productive age, from very young ones (19 % at elementary schools and 8 % at secondary schools) to senior teachers over 60 years (2 % at elementary schools and 6 % at secondary schools).

Table 1: Age of participants

Age of participants	Elementary school teachers	Secondary school teachers
less than 30 years	19 %	8 %
31 - 40 years	25 %	33 %
41 – 50 years	32 %	28 %
51 - 60 years	21 %	25 %
more than 60 years	2 %	6 %

Variety in teaching experience can be observed in our research sample – from beginning teachers (23% at elementary schools, 14 % at secondary schools to senior teachers with teaching experience over 35 years (4% at elementary schools, 8% at secondary schools), see data on table 2.

Table 2: Length of teaching experience

Years of teaching experience	Elementary school teachers	Secondary school teachers
less than 5	23 %	14 %
5-10	18 %	20 %
11-15	13 %	16 %
16-25	24 %	26 %
26-35	18 %	16 %
35+	4 %	8 %

During quarantine and closures, schools in the Czech Republic had to switch to distant online teaching as an emergency measure within a very short period of time. On the other hand, most teachers got very little training in this regard. Nevertheless, data of Ministry of Education of the Czech Republic confirmed most schools adopted online teaching despite obstacles. This is confirmed in our sample (see tables 3 and 4).

Table 3: Use of online teaching during Pandemic

Use of online teaching during pandemic	Elementary school teachers	Secondary school teachers
yes	95 %	96 %
partly	5 %	4 %
no	1 %	0 %

Table 4: Previous experience with online teaching

Previous experience with online teaching	Elementary school teachers	Secondary school teachers
yes	5 %	6 %
partly	5 %	12 %
no	90 %	82 %

The swift switch from traditional classrooms to online classes in the wake of COVID-19 has given teachers very little or no time for planning and preparation. Next items of our questionnaire aimed at teacher feelings about new methodology and demands preparation of distant online teaching put on them (tables 5-8).

Table 5: Teacher feelings about online teaching

Going down well with online teaching	Elementary school teachers	Secondary school teachers
yes	9 %	13 %
partly yes, partly no	**72 %**	72 %
no	18 %	15 %
no explicit opinion	1 %	0 %

Table 6: Time needed for preparation during Pandemic

Time for preparation/day	Elementary school teachers	Secondary school teachers
less than 30 munutes	1 %	1 %
30 minutes	1 %	1 %
1 hour	10 %	7 %
1,5 hours	9 %	9 %
2 hours	16 %	14 %
more than 2 hours	63 %	68 %

Table 7: Was the preparation for online teaching longer than for regular class teaching?

More time for online class preparation	Elementary school teachers	Secondary school teachers
yes	83 %	88 %
no	4 %	9 %
same time	13 %	3 %

Table 8: Did you feel more tired during online teaching than during regular class?

More tired during online teaching	Elementary school teachers	Secondary school teachers
yes	53 %	45 %
rather yes	26 %	30 %
rather no	17 %	19 %
no	4 %	6 %

Table 9: Do you think you are in risk of being threatened by the BS?

Do you think you might get BS?	Elementary school teachers	Secondary school teachers
yes	14 %	13 %
probably yes	32 %	33 %
probably no	38 %	35 %
no	16 %	19 %

Teachers in our survey were administered Maslach Burnout Inventory (MBI). The development of the MBI was based on the need for an instrument to assess experienced burnout in a wide range of human service workers. Standardized method includes 22 items and respondents assess every item on a scale 0–7 (0-not at all to 7 quite strong) regarding their feelings of exhaustion. The Maslach Burnout Inventory captures three dimensions of burnout: **emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA)**. The three key dimensions of this response are an overwhelming exhaustion, feelings of cynicism and detachment from the job, and a sense of ineffectiveness and lack of accomplishment.

Table 10: Teacher Burnout Syndrome - results
Score in emotional exhaustion

Score in emotional exhaustion	Elementary school teachers (N=337)	Secondary school teachers (N=155)
low	38 %	45 %
average	27 %	20 %
high	36 %	35 %

As seen from the table 10, 27 % of elementary school teachers performed an average score in the EE and 36 % high score. Their colleagues from secondary school showed similar results especially in high scores – this means more than one third of teachers is threatened by emotional exhaustion.

Table 11: Teacher Burnout Syndrome – results
Score in depersonalization

Score in depersonalization	Elementary school teachers (N =337)	Secondary school teachers (N =155)
low	74 %	71 %
average	18 %	22 %
high	8 %	7 %

Results in the second dimension are more positive than in the first dimension as 74 % of elementary school teachers and 71 % of secondary school teachers show low level of depersonalization.

Table 12: Teacher Burnout Syndrome - results
Personal accomplishment

Score in personal accomplishment	Elementary school teachers (N=337)	Secondary school teachers (N=155)
Low	11 %	16 %
Average	29 %	23 %
High	60 %	61 %

Results in the third dimension are also more positive compared to the first dimension as 60 % of elementary school teachers and 61 % of secondary school teachers had high score in personal accomplishment.

Conclusion

1) Distant online teaching: 95 % of elementary school teachers and 96 % of secondary school teachers introduced within a very short time full online classes, the rest of teachers combined online teaching with other methods. 90 % of elementary school teachers and 82 % of secondary school teachers had no previous experience with distant teaching.

2) Most teachers did not go down very well with online teaching, but 72 % of elementary school teachers and 78 % of secondary school teachers held the view that online teaching had both positive and negative aspects.

3) Most teachers needed lots of self-training to do online teaching well. They felt more exhausted as their preparation for online teaching was much more demanding and time-consuming compared with standard classes.

4) Burnout Syndrome was confirmed in the emotional exhaustion dimension (EE), of the Maslach Burnout Inventory (36 % of elementary school teachers, 35 % of secondary school teachers), but not in other two dimensions – depersonalization (DP) and personal accomplishment (PA).

Members of the teaching profession experienced psychological discomfort at the beginning of the 2020–2021 academic year. Faced with the situation of COVID-19 pandemic, many teachers were dealing with new measures, situations, sometimes with a lack of clear guidelines. Working from home, using ICT for online teaching created feelings of tension, anxiety and exhaustion of many teachers as proved by our results.

References

[1] Ghanizadeh, A., Jahedizadeh, S. Teacher Burnout: A Review of Sources and Ramifications. British Journal of Education, Society and Behavioral Science 6 (1): 24-39, 2015, ISSN 2278-0998.

[2] Cheptea, D. Assessment of Burnout among Teachers during the COVID-19 Pandemic. Https://doi.org10.31688/ABMU.2021.56.2.06 vol. 56, no. 2, pp. 179-184. Archives of the Balkan Medical Union.

[3] Jakubowski, T.D., Teachers´ mental health during the first two waves of the COVID-19 pandemic in Poland. 2021. https://doi.org/10.1371/journal.pone. 0257252.

[4] Sánchez-Pujalte, L. Teachers´ Burnout Syndrome During COVID-19 Pandemic in Spain: Trait Emotional Intelligence and Socioemotional Competencies Sustainability 2021, 13 (13), 7259, https://doi.org/10.3390/Su 13137259.

[5] Schwab, R.L. Teacher Burnout: Moving beyond „psychobable", 2009. https://doi.org/10.1080/00405848309543033.

Use of Comics for Enhancing Productive Skills and Motivation in Dental Students

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Abstract

The present work demonstrated how comic strips can improve both writing and speaking competencies. The first phase, regarded as quantitative, consisted of a pre-test where were assessed 30 fifth-year dental students belonging to the Stomatology Faculty of Universidad César Vallejo- Piura-Peru. Afterward, they participated in an English for Specific Purposes (ESP) program, where was used comics containing the common dental daily situation in this Peruvian region. Subsequently, the students were surveyed with an AMTB survey for measuring motivation and its types in the aforementioned students, this last part was the qualitative part of this research. These outputs were compared with the responses given by 8 students in a semi-structured interview. The finds were the improvement of productive skills in these students and their integrative and instrumental motivation.

Keywords: English for Specific Purposes, Intervention Program, Productive Skills, Motivation

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Introduction

When the English language is designated a "Lingua Franca", it describes a condition by which this language is one of the most outstanding ways of communicating science and technology knowledge, among people worldwide. Proof of this there are more English speakers as a second language than English native speakers (Smokotin et al 2017). One of the most outstanding aspects is the increasing amount of updated information in the mentioned language (Pérez-Llantada et al., 2011). The dental field is on this matter. To take an example is notable the difference between the number of papers about dental infections in English (28,028), versus the Spanish version (52) in a well-known database (Szabó et al., 2020). Another component of the same reality is that the English language has split into diverse ways, all of which seek to meet the requirements of those who use them. Thus, English for Specific Purposes (ESP) is a branch of classic English and is a set of communicative competencies that have every profession or occupation (Paltridge, 2015). This means that there is an English for dentists, and is a combination of science, medicine, and oral health, and is strongly associated with the labor field of the aforementioned professional, without forgetting that this training is more common in countries where English is not the native language like Peru (Purposes & Learning, 2021). Furthermore, productive skills (writing and speaking) are vital for a dentist, both for prescribing some medications after oral treatment and for providing any explanation to the patient about his oral condition. Chalak & Kassaian (2010) mention that writing is creating a text with a logical sequence of words, following grammatical rules, and having greater difficulty than speaking. While Kellogg & Raulerson (2007) indicate that writing is learned by writing. On the other side, this is a powerful force and is appropriate to improve the student's writing competencies, taking into account job situations. On the other hand, speaking skills are considered many times the most difficult English language skills, and are fairly demanding, (Guiora, 1972).

According to Richards (2006), English skills should be learned without fear of being wrong, in other words, to write and speak without thinking in grammatical rules, because this is an amazing experience for expressing your ideas and knowledge and on the other side, should be promoted the use of English in real situations. If it is taken into account that productive skills have a level of complexity, that is improved by specific activities in the classroom, then the use of comics could be a valuable media for overcoming disabilities both for writing a dental report and giving an explanation to patients about the most appropriate treatment, both of them without any fear of being mistaken. The latter is described by (Rokhayani et al., 2014), who concluded that comics are interesting media for improving vocabulary in the students, in addition to being an excellent option for teachers for designing their instructional material. Thus Chen et al. (2018), conclude that using comics can improve the autonomy of students, at the same time that they obtain better results than those that use commonly textbooks. A similar situation happens with Listyani (2019) who concludes that comics arouse the imagination every time that students write an essay. As required to explain the connection between comics and motivation, it is possible to cite McLaughlin & Bell (2002), who affirm that using comics is a usual practice for illustrating the theory, previously explained, this condition allows students are motivated to understand it. In a similar context Themelis & Sime (2015), describe the benefits of comics application in the classroom, one of them is the motivation with less anxiety and better understanding, and skills acquisition. According to Klimova (2011) achieving your English students are motivated is taking into account what they need to know, and allowing them can speak without stopping, even mistakes.

Motivation, for its part, is considered by researchers as the driving factor to achieving success or failure in any learning process, and indeed is the need or the reason that makes the students aim to achieve a goal (Dörnyei, 1998). There are various means of classifying motivation, one of these considers both integrative and instrumental motivation, which come to be to have a target to mastering a foreign language or use this mastery to obtain the best work, respectively (Mihic & Tennant, n.d.).

Participants

For the current research participated 30 dental students (12 male and 18 female), ranging in age from 17 to 22, and belonging to Universidad César Vallejo. Furthermore, they were selected from non-random sampling, the latter is because they could enroll in the course English with comics.

Methodology

The first phase of this research used a pre-experimental design, that is to say, it was considered the English with comics intervention program applied to a single group. A pre-test measured the level of expertise in written and oral skills in English for medical purposes. After the pre-test, the students participated in synchronous and asynchronous lessons about anatomy for dentists for five weeks, using comics. The comic designed by the author had a principal character who is a dental student, who had a disastrous presentation in class, after that, he knew Sancoyoc, a dentist in Inca´s Empire, and next to it, the character learns anatomy topics mainly head and neck (Table 1), with the help of 30 students who completed the empty bubbles, using vocabulary learned in class, at the same time, these students stimulate their creativity in text production. Simultaneously, the student practiced speaking competencies, recording and sharing their voices through WhatsApp web. In the last part of this phase, the students designed a comic story about a dental consultation, these stories were used for evaluating written and oral skills.

In the second phase, the students completed the ATMB survey, this survey was modified by seeking to know their motivation type (Instrumental & Integrative) in them.

The present study had the next hypothesis:

H0 = There is not a significant difference in average marks of writing skills before and after comic program application.
H1= There is a significant difference in average marks of writing skills before and after comic program application.
H0 = There is not a significant difference in average marks of oral skills before and after comic program application.
H1= There is a significant difference in average marks of oral skills before and after comic program application.

Table 1: Topics developed in English for Dentist Program.

Week	Topic	Product
First	**Physical description of the human head and face:** • Anatomical description of a face, • Medical considerations about a face.	A story designed in a comic about Cleft Lips patients before and after surgery.
Second	**Human cranium** • Main cranial bones.	A story was designed through a comic about cranial fractures.
Third	**Human Brain and cranial pair nerves.** • Brain. • Cerebellum • Chewing function.	A story about facial paralysis, and its effects on chewing.
Fouth	**Human mouth and teeth.** • Anatomy of the human mouth. • Tooth and teeth. • More common diseases in the mouth.	A story about a patient with swollen wisdom teeth.
Fifth	**Dental consultation** • Common dentist questions. • Common oral diseases in our country.	A story about dental consultation, where will be assessed a possible diagnosis and treatment (both of them should be consistent).

Source: topics belong to English for Dental Purposes developed from February to April 2021.

Results

Table 2: Paired Samples Statistics for writing skills.

	Mean	N	Std. Deviation	Std. Error Mean
Pre- Writing	2,3333	30	1,02833	,18775
Post-Writing	14,800	30	1,62735	,29711

Source: Pre and Post writing test (February -April 2022).

Table 2 shows the results from the pre-test and post-test (writing), applied to 30 dentistry students, before and after the comics intervention program. There is a clear difference between pre and post-assessment (with a difference of 12.47).

Table 3. Paired samples test.

	Paired differences					T	df	Sig. (2-tailed)
				95% confidence range				
	Mean	Typical Deviation	Standard error	Inferior	Superior			
Pre-test	-12,466	1,9605	,35794	-13,1987	-11.73459	---	29	,000
Post-test						-34,82		

Source: Pre and Post- writing test (February – April 2022).

Table 3 shows a significance of 0,000, obtained by paired sample T-test application, and this amount is lower than Alpha (0.005), this allows us to conclude that the null hypothesis is rejected, and with this in mind is probable to affirm that the comics intervention program is effective for enhancing writing- skills in dentistry students.

Table 4. Results from Speaking skills before and after Dental comics program.

Writing Criteria	Pre-test	Std. Deviation	Post-test	Std. Deviation
Content	0.600	0.563241850	4.133	0.660894552
Paragraph structure	0.566	0.626062316	4.033	0.568320777
Grammar	0.666	0.552647010	3.600	0.813676204
Vocabulary	0.500	0.574499140	3.400	0.770132100

Source: Pre and Post writing test (February – April 2022).

Table 4 shows the writing criteria outcomes in both pre and post-test. It is clear that content and paragraph structure were two criteria that were more progress, in other words, the students were able to write a paragraph where the topic considered in the assessment was achieved.

Table 5: Paired Samples Statistics.

	Mean	N	Std. Deviation	Std. Error Mean
Pre- Oral	1,5000	30	1,04221	,19028
Post- Oral	14,100	30	1,09390	,19970

Source: Pre and Postoral test (February -April 2022).

Table 5 presents the outcomes obtained from the pre-test and post-test(oral), applied to 30 dentistry students, before and after the comics intervention program. Notice that there is a significant difference in both cases (with a difference of 12.6).

Table 6. Paired samples test.

	Paired differences					**T**	**df**	**Sig. (2-tailed)**
	Mean	**Typical Deviation**	**Standard error**	**95% confidence range**				
				Inferior	Superior			
Pre-test Post-test	-12,600	1,3025	,23781	-13,0863	-12.1136	--- -52,98	29	,000

Source: Pre and Postoral test (February- April 2022).

Table 6 shows a significance of 0,000, and at the same time, this is lower than Alpha (0.005), this allows us to conclude that the null hypothesis is rejected, and with this in mind is probable to affirm that the comics intervention program is effective for enhancing oral- skills in dentistry students.

Table 7. Results from Speaking skills before and after Dental comics program.

Speaking Criteria	**Pre-test**	**Std. Deviation**	**Post-test**	**Std. Deviation**
Fluency and coherence.	0.533	0.571346464	3.333	0.660894552
Lexical resources	0.266	0.449776445	3.766	0.568320777
Grammatical range	0.366	0.490132518	3.600	0.813676204
Pronunciation	0.333	0.479463301	3.400	0.770132100

Source: Pre and Post- oral tests (February- April 2022).

Table 7 presents the results of the speaking criteria, It is clear that improved both lexical resources and grammatical range, this situation has related to the learning of dental vocabulary during the intervention program, which gives confidence to the students at the time of speaking.

Table 8: Interest in Foreign Language.

	Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Disagree	1	5.0	5.0	5.0
Neutral	5	25.0	25.0	30.0
Agree	13	65.0	65.0	95.0
Strongly agree	1	5.0	5.0	100.0
Total	20	100.0	100.0	

Source: Data obtained from AMTB survey (April 2022).

This table shows that 70 percent of students who agreed that they are interested in mastering a foreign language, desire to read the news in English and learn a new language if they would travel, apart from that the students agreed that foreign Languages sound weird, and indeed they prefer to see movies dubbed into Spanish instead of English. These results are coincident with views found in the questionnaire completed by them:

"I do not read often, but I am interested in research papers in English" (student 1).
"I read some comics in English" (student 2).
"I like learning English, for this reason, I read magazines and see documentaries" (student 4).
"Sure, and I can travel without problems" (student 1).
"Sometimes English produces me stress, above all when I do not understand the meanings of words" (student 3).
"I would be interested, but I would not like it because English is so complex, not only in its grammar but in its pronunciation" (student 4).

Table 9: Motivational Intensity.

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	2	10.0	10.0	10.0
Neutral	7	35.0	35.0	45.0
Agree	10	50.0	50.0	95.0
Strongly agree	1	5.0	5.0	100.0
Total	20	100.0	100.0	

Source: Data obtained from AMTB survey (April 2022).

Table 8 presents the Motivational Intensity results where we can notice a strong neutral position about the Motivational intensity and considering the expressed by (Richter et al., 2016) about the effort for achieving goals, it follows that there is not a real commitment of dentistry for learning English for specific purposes.

Table10: Integrative Motivation.

	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	5	25.0	25.0	25.0
Strongly agree	15	75.0	75.0	100.0
Total	20	100.0	100.0	

Source: Data obtained from AMTB survey (April 2022).

According to this table, the students agreed (100%), that English allows them to talk to a variety of people, and understand better their lifestyle. These results are in line with expressions like:

"Yes, because I would like to understand different cultures" (students 3).

Table 11: Instrumental Motivation.

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	2	10.0	10.0	10.0
Agree	7	35.0	35.0	45.0
Strongly agree	11	55.0	55.0	100.0
Total	20	100.0	100.0	

Source: Data obtained from AMTB survey (April 2022).

Table 11 shows the students agreed (90%), that English allows they to get better jobs, be more educated, and be respected by people,

"Of course, because it improves the employment possibilities" (student 6).

Discussion

The present work aims to demonstrate the efficacy of comics in enhancing productive skills in dental students and the motivation that they have at the end of the intervention program application. In this way is noted a clear difference between the results of pre and post-test in written proficiency of the students above. These conditions are similar to previous studies, such as those conducted by Cabrera-Solano et al., (2021), who showed that the use of comic stips improved writing abilities, and indeed its use encourages motivation among the students. While Green (2015) demonstrated that comics, used by medical students improve writing skills and other positive competence like the effect of comics on their professional identity. On the other hand, Ahsanah & Utomo,(2020) concluded that comics improve the writing competencies in narrative work. Karlimah et al. (2021) for their part, mentioned the benefits of comic use. Through their storyboard, the writing and other skills are considered as a whole.

Furthermore, Annisa & Nst (2020) demonstrated that comics are an excellent medium for improving oral skills in students, above all taking into account that the comics possess special characteristics like design and color that are appealing to students and allow their use for learning. Britalia (2005)describes how comics can be used for improving oral skills in three ways: interaction, transaction, and performance talking. For his part Cervesato (2011) shares, that the outcomes obtained with the use of comics are mainly the development of communicative skills and motivation. While is true that Savitri(2019)demonstrates that comics are useful for maintaining a language different from English, also his research can be used for enhancing oral competencies in non-anglophone students, as in our case. All these results go along with those obtained in the current investigation, that is to say, is visible in tables 5,6, and 7, the improvement in the oral skills of dental students.

Based on the results about motivation, (tables 8,9,10, and 11), it observes that students are both integrative and instrumental motivated, this is due to comics improving the skills that students need for traveling around the world and getting a good job. This approach is similar to one demonstrated by (Samad et al., 2012) who concluded that if the teachers pay more attention to the emotional component of students, they will develop their integrative motivation and if during the class is used actual life activities will be enhanced the instrumental motivation. Other interesting findings are published by Hernández(2006) who affirms that motivation is related to the class and assignments, and he adds that gathering information about the preferences and needs of students provide us valuable data for designing a successful learning session.

Conclusions

The findings reported in this research are the improvement in productive skills through the comics used in a group of 30 dental students. In this way, it was shown that the use of comics where the main character has similar learning experiences to the students, encourages them to familiarize themselves with specialist vocabulary and grammar that allow them to complete a creative story in a dental imaginary scenario. As well that students improved their oral skills because the recorded audio allows them to give life to the main character. These two fun activities enhanced mentioned productive skills.

On the other side, it is evident that the use of appropriate learning strategies like comics, improves motivation, in this case, it was found a slight difference between integrative and instrumental students' motivation, in other words, the student's desire to learn English both for meeting new people and getting an ideal job.

Appendix

Survey Motivation

Case Processing Summary

		N	%
Cases	Valid	30	100,0
	Excluded[a]	0	,0
	Total	30	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,906	27

Cronbach Alpha
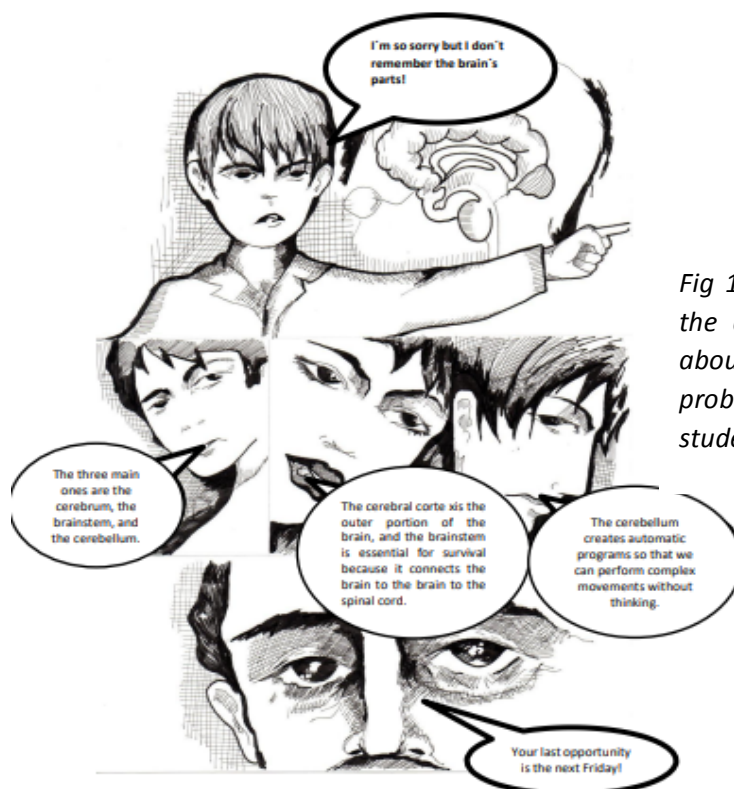
Fig 1. The main character was created by the author of this research, the story is about a dentist student who has some problems in understanding anatomy. Every student filled the bubbles, creating a story.
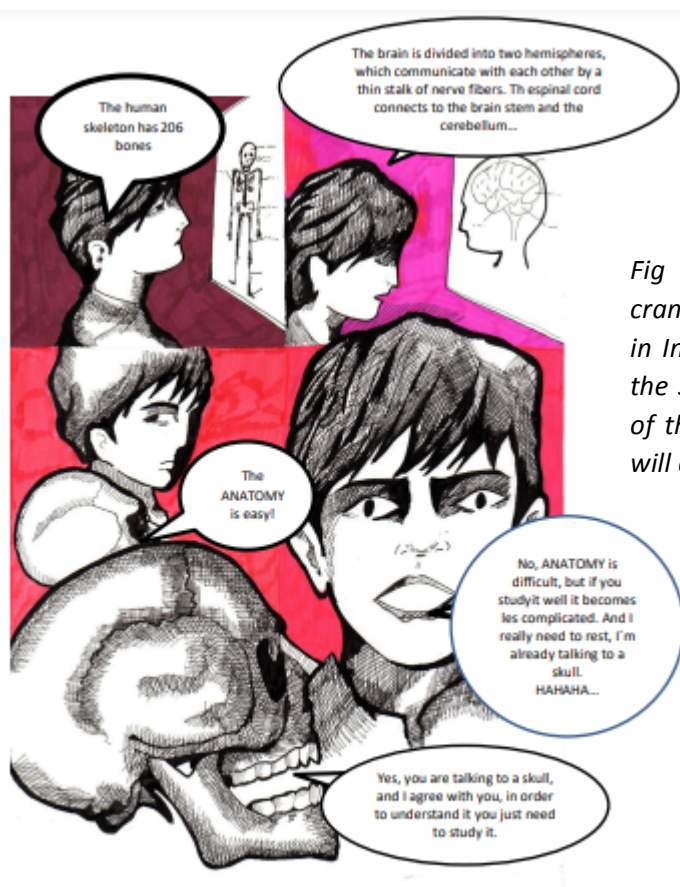
Fig 2. In the lab, he knows an old cranium belongs to Sancoyoc (a dentist in Inca´s Empire), and they agree that the Sancoyoc will explain the anatomy of the head and neck and the student will explain new treatments.

Fig 3. The Sancoyoc explains parts of mouth and student explains what is the surgical treatment of cleft lips.

Fig 4. Every student created a comic strip, about a dental appointment, and the dialog between the dentist and the patient was recorded in audio.

Fig 5. In all stories, there was the use of dental vocabulary and was noted student´s motivation, even when they answered two questions about comics, they showed a favorable view about their use of them for learning English.

Would you recommend the use of comics for learning English?
"Yes, if the student has an advanced level" (student 2).
"Yes, because it is a practical and easy way of learning English" (student 3).
"it would be most important because it would improve their English level" (student 4).
"Yes, because they helped me to understand English" (student 7).

What difficulties have you found learning English with comics?
"None, because a comic summarizes practically a story, in this case, dentistry stories" (student 1).
"Trying to relate the picture to the text "(student 3).
"Only when the brain issue was treated, so the names are a little difficult" (student 8).
Finally, they agreed the comics are useful for improving English in dentistry students and professionals:

Do comics improve your EMP level?
"Yes, is a didactic approach and an effective method for learning English" (student 1).
"For me not, because comics have some contractions that would complicate to students" (student 2).
"Yes, because the pictures can guide us what means that characters want to say" (student 3).
"They are the best way to understand what the characters want to say"(student 4).
"Yes, because they are highly interactive and interesting" (student 5).
"Yes, because they make you learn English simply and easily. (student 6).

References

Ahsanah, F., & Utomo, D. T. P. (2020). The Use of Digital Comic in Developing Student's English Competence. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, *8*(2), 373–383. https://doi.org/10.24256/ideas.v8i2.1660

Annisa, P. S. M., & Nst, R. D. (2020). Comic Strips and Board Game As a Media in Learning Oral Language Skills for Students. *Jurnal Darma Agung*, *28*(2), 313. https://doi.org/10.46930/ojsuda.v28i2.653

Britalia, E. D. (2005). Profile Issues in Teachers ` Professional Development Developing Aural Skills through Communicative and Interactive Tasks Desarrollo de las habilidades orales a través de tareas interactivas. *Profile Issues in Teachers Professional Development*, *6*, 83–96.

Cabrera-Solano, P., Gonzalez-Torres, P., & Ochoa-Cueva, C. (2021). Using piston for teaching EFL writing in higher education during the Covid-19 pandemic. *International Journal of Learning, Teaching and Educational Research*, *20*(9), 102–115. https://doi.org/10.26803/ijlter.20.9.7

Cervesato, I. (2011). Discovering logic through comics. *ITiCSE'11 - Proceedings of the 16th Annual Conference on Innovation and Technology in Computer Science*, 103–107. https://doi.org/10.1145/1999747.1999778

Chalak, A., & Kassaian, Z. (2010). Motivation And Attitudes Of Iranian Undergraduate EFL Students. *GEMA Online Journal of Language Studies*, *10*(October 2016), 37–56.

Chen, G. D., Fan, C. Y., Chang, C. K., Chang, Y. H., & Chen, Y. H. (2018). Promoting autonomy and ownership in students studying English using digital comic performance-based learning. *Educational Technology Research and Development*, *66*(4), 955–978. https://doi.org/10.1007/s11423-018-9597-7

Dörnyei, Z. (1998). Motivation in second and foreign language learning. *Language Teaching*.

Green, M. J. (2015). Comics and medicine: Peering into the process of professional identity formation. *Academic Medicine*, *90*(6), 774–779. https://doi.org/10.1097/ACM.0000000000000703

Guiora, A. Z. (1972). Construct validity and transpositional research: Toward an empirical study of psychoanalytic concepts. *Comprehensive Psychiatry*, *13*(2), 139–150. https://doi.org/10.1016/0010-440X(72)90019-3

Hernández, T. (2006). Integrative motivation as a predictor of success in the intermediate foreign language classroom. *Foreign Language Annals*, *39*(4), 605–617. https://doi.org/10.1111/j.1944-9720.2006.tb02279.x

Karlimah, K., Hamdu, G., Pratiwi, V., Herdiansah, H., & Kurniawan, D. (2021). The development of motion comic storyboard based on digital literacy and elementary school mathematics ability in the new normal era during a covid-19 pandemic. *Journal of Physics: Conference Series*, *1987*(1). https://doi.org/10.1088/1742-6596/1987/1/012026

Kellogg, R. T., & Raulerson, B. A. (2007). Improving the writing skills of college students. *Psychonomic Bulletin and Review*, *14*(2), 237–242. https://doi.org/10.3758/BF03194058

Klimova, B. F. (2011). Motivation for learning English at a university level. *Procedia - Social and Behavioral Sciences*, *15*, 2599–2603. https://doi.org/10.1016/j.sbspro.2011.04.153

Listyani. (2019). The use of a visual image promotes narrative writing ability and creativity. *Eurasian Journal of Educational Research*, *2019*(80), 193–224. https://doi.org/10.14689/ejer.2019.80.10

McLaughlin, R., & Bell, R. (2002). Teaching and learning. *Emergency Medicine Journal*, *19*(4), 375–376. https://doi.org/10.1136/emj.19.4.375-b

Mihic, L., & Tennant, J. (n.d.). *Integrative Motivation : Changes During a Year-Long Intermediate Level Language Course Integrative Motivation : Changes During*.

Paltridge, B. (2015). Developments in English for Specific Purposes Research. *Developments in ESP Research, OnCUE Journal*, *9*(2), 73–85.

Pérez-Llantada, C., Plo, R., & Ferguson, G. R. (2011). "You don't say what you know, only what you can": The perceptions and practices of senior Spanish academics regarding research dissemination in English. *English for Specific Purposes*, *30*(1), 18–30. https://doi.org/10.1016/j.esp.2010.05.001

Purposes, S., & Learning, L. I. (2021). *Lexicogrammatical aspects in English for dentistry acquisition materials Zobārstniecības jomā lietojamās angļu valodas argues Indra Karapetjana, Gunta Roziņa. or CLIL*, 64–73.

Richards, J. (2006). Communicative Language Teaching Today. In *Cambridge University Press* (Vol. 25, Issue 2).

Richter, M., Gendolla, G. H. E., & Wright, R. A. (2016). Three Decades of Research on Motivational Intensity Theory: What We Have Learned About Effort and What We Still Don't Know. *Advances in Motivation Science*, *3*(February 2017), 149–186. https://doi.org/10.1016/bs.adms.2016.02.001

Rokhayani, A., Ririn, A., & Utari, P. (2014). The Use of Comic Strips As an English Teaching Media for Junior High School Students. *LANGUAGE CIRCLE Journal of Language and Literature*, *VIII*(2), 143.

Samad, A. A., Etemadzadeh, A., & Far, H. R. (2012). Motivation and Language Proficiency: Instrumental and Integrative Aspects. *Procedia - Social and Behavioral Sciences*, *66*, 432–440. https://doi.org/10.1016/j.sbspro.2012.11.287

Savitri, A. I. (2019). Language Maintenance Through Comic Strips. *CULTURALISTICS: Journal of Cultural, Literary, and Linguistic Studies*, *3*(1), 11–16. http://ejournal.undip.ac.id/index.php/culturalistics

Smokotin, V. M., Petrova, G. I., & Gural, S. K. (2017). Teaching and learning English as the global language in the education systems of the globalized world. *Language and Culture*, *10*, 49–63. https://doi.org/10.17223/24109266/10/9

Szabó, R. M., Davis, J. M., & Antal, M. (2020). Introducing career skills for dental students as an undergraduate course at the University of Szeged, Hungary. *BMC Medical Education*, *20*(1), 1–11. https://doi.org/10.1186/s12909-020-1981-4

Themelis, C., & Sime, J. (2015). Comics for include, technology-enhanced language learning. *Lancaster University*, *1994*, 1–13.

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The Rising Importance of Soft Skills for IT-Students:
Working Online in Agile Globally Distributed Teams During the Pandemic

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Abstract
During the current pandemic, globally distributed software development teams have had to adapt their communication strategies. IT-students will need to learn new soft skills during their university studies. This work presents results from qualitative interviews of IT professionals during the current pandemic. Specific problems in adapting to remote, online work were identified. Although technical hurdles could be rapidly solved by acquiring new hardware and software, problems in online communication proved much more difficult. Soft skills, such as resolving team conflicts and intercultural communication, were judged to have an increased importance during the pandemic. These results will be used to define requirements for a university course to teach students the skills necessary to work in globally distributed, agile software development teams.

Keywords: Soft-Skills, Communication, Intercultural, Agile, Distributed, IT

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Introduction

The COVID-19 pandemic caused rapid changes in all aspects of daily life. Although it would at first appear that technically affine IT professionals should be uniquely qualified to adapt to remote work, programming skills alone are no longer sufficient in order to cooperate successfully in global software projects during a pandemic. Travel restrictions meant that team members were often not allowed to meet in person to get to know one another. Contact restrictions, even within one country, have prohibited team members from working together in person.

These challenges presented by virus mitigation measures prevent software development teams from implementing the major principles of agile software project management. One of the most widely used methods of agile project management is called Scrum. According to the Scrum Guide (Schwaber & Sutherland 2011), agile teams should ideally be composed of a maximum of 10 people, all working together as a close-knit team in one room. This method of working in close quarters was forbidden during lockdown and subsequent pandemic mitigation measures.

The research questions investigated in this work address these changes:

1. How has working in agile, globally distributed teams changed during the pandemic?
2. What new skills do IT students need to master during their studies to work effectively in this new reality?

Related Work

Even before the pandemic, a number of authors have addressed the challenges involved in adapting agile project management principles to distributed teams. Eckstein (2010) explored the practical implications of trying balance two conflicting goals in modern software development: the close collaboration prescribed by agile principles vs. the physical separation of team members who may be geographically distributed across different countries.

Requirements engineering is one of the most important aspects of the software development process, which also requires an intense amount of communication. Misunderstandings of the project requirements has doomed many a software development project to failure. Due to differences in language and culture, elicitation of project requirements can be even more difficult in a distributed environment. Abbasi et al. (2019) discussed the challenges encountered when trying to conduct requirements engineering in a distributed software development environment. Usmani, Hassan, & Mahmood (2017) identified major impediments encountered when conducting requirements engineering in a distributed environment. Schmid (2014) conducted a wide literature survey of the major challenges in global software requirements engineering and also identified some possible solutions to these challenges.

Strategies for managing distributed agile software development teams have been suggested by a number of authors. Sutherland, Viktorov, Blount & Puntikov (2007) presented ideas for adapting agile scrum project management methods to outsourced development teams. Woodward, Surdek and Ganis, (2010) developed an alternative practical method to adapt scrum project management principles to distributed teams.

The effect of the pandemic on software engineering professionals has begun to be investigated.

Ralph et al. (2020) studied how the COVID-19 pandemic has affected the productivity and general sense of well-being among IT professionals in 53 countries around the world. Especially women and parents with small children reported extremely negative effects due to the pandemic. People with disabilities also reported increased problems when compared to the control group. Ralph et al. recommend that employers should make an extra effort to identify ways to provide additional support to individuals suffering from specific disadvantages during the pandemic.

Methods

Semi-structured, qualitative interviews were conducted with experienced IT professionals from small, medium and large companies in Nuremberg, Germany (Table I). From each company, participants were recruited to take part in the interviews. One interview participant from each of the three major Scrum roles was chosen from each company:

1. Scrum Master: Responsible for processes and effectiveness of the team
2. Product Owner: Communication with stakeholders to define project requirements
3. Developer: Responsible for development of the software product

Table I Companies Studied

Companies studied	Small	Medium	Large
Size	less than 10 employees	ca. 200 employees	400 employees at the local branch, other branches world-wide
Customers	National	International	International
Employees	Multicultural	Multicultural	Multicultural
Official Company Language	German	German	English

For each of the three roles (Scrum Master, Product Owner, Developer), an individual list of questions was developed. Each of list contained questions about cooperation, communication and team cohesion, from the perspective viewpoint of each role.

Each interview lasted approximately 30 – 45 minutes and was conducted online via video conferencing software due to contact restrictions. Due to data privacy concerns, none of the interviews were recorded. With the approval of the interview partners, written protocols of each interview were prepared. After each interview, these protocols were sent to the interview partners so they would have a chance to correct any errors which may have inadvertently occurred during notetaking.

Results

Issues identified during the interviews were grouped into six categories:

1. General issues
2. Technical problems and selection of tools
3. Synchronous vs. asynchronous communication
4. Team communication and knowledge management
5. Foreign language problems
6. Personal contact.

Interview partners readily identified general advantages to remote work, such as the time saved by not having to commute to the office every day. Some employees moved home to live with their parents, or even back to their home countries. Working from home seemed to be a double-edged sword for families with small children. On the one hand, it was considered as an advantage when many child-care facilities were closed due to the pandemic. On the other hand, some parents expressed feeling burdened by trying to work and home-school their children at the same time. Especially for those employees who did not have a separate room to use as a dedicated office, it was often difficult to separate work from their private lives. Some employees also reported feeling pressured to answer e-mail late at night, especially those who reported using the dinner table as their home offices.

Technical problems could often be minimized by allowing employees to use their company hardware and software systems at home. Seeing other colleagues pack up their office computers and supplies initially let to a feeling of comradery. Weak internet connections were a problem at the beginning. For those who lived in large cities, a more expensive tariff with a higher bandwidth could be booked with their internet providers. Those who lived far out in the country, however, did not have any way to increase the speed of their internet connections.

Online communication was conducted via video conferencing systems for synchronous communication. One major problem identified was a lack of attention during video calls. Some team members admitted to answering e-mail or otherwise multitasking during meetings. One solution was to ask meeting participants to turn on their video cameras. People felt it would be rude to multitask if they felt others could see them. Another solution was to send material and meeting agendas beforehand, so that everyone could read through documents and save time. By strictly adhering to prearranged agendas, the length of meetings could be limited. Sharing user screens when discussing diagrams or demonstrating code greatly increased understanding.

Asynchronous communication was conducted via text chats or e-mail. A major problem with text communication was that non-verbal cues are missing. Especially when writing in a second language to people from another culture, the wrong tone can be easily conveyed. Unintended conflicts due to misunderstood text communication were quite common.

Difficulties in knowledge management were reported by all participants. Information could not be evenly communicated between team members. This lack of transparence decreased acceptance of some decisions. Knowledge diffusion from experienced team members to new employees also suffered. "Innovation Fridays" were instituted by one of the companies. One

experienced team member would present a new method or technology to the rest of the group.

All of the companies which participated reported having team members from different countries or cultures. Each of the interview participants reported conversing regularly in English with team members, customers or other stakeholders. Only one company had team members who learned English as their first, native language. All of the other team members learned English as a second language. Language barriers, including different levels of English proficiency among non-native speakers of English, were increased by online communication. In spite of cultural awareness seminars, cultural differences between team members remained a challenge. One team implemented the practices of "active listening" and "mirroring". This means that the listeners should repeat the message heard in their own words to make sure that the meaning was understood correctly.

One of the biggest changes reported was the lack of in-person contact. Informal communication between co-located team members, which used to take place over lunch or coffee, had previously helped build trust between team members and to integrate new employees. Team-building measures, such as online game nights, or "chat-roulettes" with randomly selected team members, were introduced. During the summer months when the infections rates were low enough, group hikes were appreciated as a chance to get to know other team members better.

Conclusions and Future Work

In conclusion, the research questions posed in the introduction can now be answered:

1. How has working in agile, globally distributed teams changed during the pandemic?

Technical challenges in adapting to remote work could be eased by supplying employees with adequate hardware and software at home. One advantage was the time saved by not having to commute to the office every day. Lack of personal contact has made team-building more difficult, especially for new team members. Time zone differences could be bridged by implementing asynchronous work schedules. Language differences increased chances for misunderstandings, especially during requirements engineering. Working from home has made it more difficult to separate work-life from family life. Employees with small children who lack child-care may faced increased burdens.

2. What new skills do IT students need to master during their studies to work effectively in this new reality?

To work effectively remotely, students need to learn to use video conferencing systems and cloud-based, collaboration platforms. Technical skills alone, however, are not sufficient. Soft skills, such as the ability to communicate with team members from other countries, who speak different native languages and come from diverse cultural backgrounds, are increasingly more important.

These results will be used to define requirements for a university course to teach students the skills necessary to work in globally distributed, agile software development teams.

Acknowledgments

References

Abbasi, F.A., Burdi, A., Khan, R.S., Naqvi, S.H.F., Abbasi, M.S & Nizamani, A.R. (2019). Requirement Engineering Challenges in Distributed Software Development, *SINDH Univ. Res. J. -Sci. Ser.*, Bd. 51, Nr. 03, S. 465—468.

Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M. & Thomas, D. (2001). Manifesto for agile software development.

Eckstein, J., (2010). *Agile software development with distributed teams: staying agile in a global world*. New York: Dorset House Pub.

Ralph, P., Baltes, S., Adisaputri, G., Torkar, R., Kovalenko, V., Kalinowski, M., ... & Alkadhi, R. (2020). Pandemic programming. *Empirical Software Engineering*, *25*(6), 4927-4961.

Schmid, K. (2014) Challenges and Solutions in Global Requirements Engineering – A Literature Survey. In *Software Quality. Model-Based Approaches for Advanced Software and Systems Engineering*, Cham, S. 85–99.

Schwaber, K., & Sutherland, J. (2011). The scrum guide. *Scrum Alliance*, *21*(19), 1.

Sutherland, J., Viktorov, A., Blount, J., & Puntikov, N. (2007). Distributed scrum: Agile project management with outsourced development teams. In *2007 40th annual Hawaii international conference on system sciences (HICSS'07)* (pp. 274a-274a). IEEE.

Usmani, N., Hassan, R. & Mahmood, W. (2017). Impediments to Requirement Engineering in Distributed Team. In *Int. J. Inf. Eng. Electron. Bus.*, Bd. 9, Nr. 6, S. 10–18.

Woodward, E., Surdek, S. & Ganis, M. (2010) *A practical guide to distributed Scrum*. Upper Saddle River, NJ: IBM Press/Pearson.

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Interrelation Between Working Memory & Consciousness Consequent SLA

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Abstract

It has been agreed about the general consensus regarding working memory that it is extensively involved in goal-directed behaviors retained and manipulated to ensure successful task execution. The theoretical framework behind working memory including its capacity limit and temporary storage is a multicomponent system that manipulates information stowing for greater and more complex cognitive utility (Baddeley and Hitch, 1974; Baddeley, 1996, 2000b). Consciousness is considered the supreme mental function which forms the highest level of mental activity. Without it, no matter how immensely intelligent humans will be just another kind of robot, existing in this world without having the awareness and experiences of seeing, hearing , touching, feeling or thinking of what it is like to be themselves (C. Uckachok 2018). The target of the research is to investigate the elements of consciousness and their effects on the working memory in SLA. The Module Online Growth and Use of Language (MOGUL[1]), as a framework which provides a basic model of focusing on the language's place in the mind. It can be used as a cross interdisciplinary theoretical framework for investigating how language is acquired, processed and stored in the mind. Moreover it will screen those relative effects of consciousness on the working memory in the SLA process. Excessed knowledge in this field consequence develop in SLA.

Keywords: Consciousness, A State of Attention, Knowledge and Awareness to the Surroundings

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[1] Mogul: A system to contribute to language acquisition and its development.

Introduction

Working Memory

Working memory is one of the most widely used terms in psychology? It has often been related to intelligence, information processing, executive function, comprehension, problem-solving, and learning, in people ranging from infancy to old age and in all sorts of animals. Working memory is the retention of a small amount of information in a readily accessible form (Nelson Cowan 2014). The use of working memory (MW) is quite ubiquitous in human thought, but the best way to improve education using what we know about working memory is still controversial. Nelson Cowan (2012), in his investigation for the concept of the working memory in the field of improving learning and education, establishes its key characteristics and boundaries. Cowan suggested that organizing knowledge, reduces one's memory load because the parts don't have to be held in mind independently that is to say, we must learn how to adjust the receptive materials to facilitate learning and education with the working memory abilities that the learner has.

There are two types of memory system: short-term memory (STM) and long-term memory (LTM) system. The information coming from the environment is processed by a series of temporary sensory memory systems and then fed into a limited capacity short-term store (STS). This is assumed to act as a WM—that is, a system for holding information and allowing it to be used to perform a wide range of cognitive tasks, including transfer into, and retrieval from, LTM. Human memory comprises an alliance of separable systems. WM is one of these, providing the temporary storage that underpins the capacity for complex thought. It may be divided into the following: the phonological loop, the visuospatial sketchpad, and the central executive. The phonological loop model assumes that forgetting is a result of simple trace decay within the store. The visuospatial sketchpad is a system that parallels the phonological loop but has proved less easy to study. The central executive is the most important, complex, but least understood component of WM. Individuals differ in the capacity of their various working memory subsystems in ways that influence scholastic achievement. There is a limited capacity on what we can keep in our stores, which can have negative effects on academic performance. Fortunately, there are many ways to enhance this and make the most of this crucial mental faculty through investigating the functions of the memory (Baddeley 2016).

Memory is related to learning but should not be confused with learning. There are three main processes involved in human memory:
- **Encoding**
  Transforming information into a form that can be stored in memory.
- **Storing**
  Maintaining the encoded information in memory.
- **Retrieving**
  Re-accessing information from the past which has been encoded and stored.

Encoding is the first process that the human memory puts in operation. The efficiency of learning, in general, depends on the efficiency of the encoding process. It is an active and selective process that depends on several factors. There are three types of factors that can influence encoding efficiency:

1. **Content factors**
   Related to the type of material to be encoded.
2. **Environmental factors**
   Related to the conditions under which the encoding takes place.
3. **Subjective factors**
   Related to variables in effect when encoding takes place.

The content factors are:
- The volume of the material (the greater the volume, the more difficult the encoding).
- The degree of organization of the material (the better organized, the easier the encoding).
- The degree of familiarity.
- The place occupied by the information in the structure of the content; that is, at the beginning, middle, or end of the material (information placed at the beginning and at the end tends to be stored more easily than that placed in the middle).
- The nature of the material.

If the information is stored, it is permanently transformed, reorganized, and included in new links even if the subject is not fully aware of the process. **Storing** the information involves both quantitative (the duration of retention) and qualitative (the fidelity of retention) aspects. According to the duration of retention, there are two levels of memory:
- Short-term memory (STM)
- Long-term memory (LTM)

Both acts as filters that protect our brain from the unbelievable amount of information we encounter daily. The more the information is repeated or used, the more likely it is to be retained in long-term memory (which is why, for example, reinforcement of the concepts learned is important when designing a learning program). This is the process of consolidation, the stabilizing of a memory trace after its initial acquisition and it would be clearly witnessed in the retrieving action of the memory.

We have several different memory systems that hold different types of information. For example, *episodic* memory is the store for events in the relatively recent past, such as the birthday party we attended last weekend. *Procedural* memory is memory for skills and habits. We use procedural memory for riding a bike or driving a car. *Semantic* memory is the store of knowledge gained over our lifetime and includes information about word meanings, spellings, and pronunciations (Dehn, 2008).

Consciousness and Learning

Consciousness is considered one of the most controversial issues in applied linguistics concerns the role of conscious and unconscious processes in second language learning. On the one hand, there are many who believe that conscious understanding of the target language system is necessary if learners are to produce correct forms and use them appropriately. In this view, errors are the result of not knowing the rules of the target language, forgetting them, or not paying attention. There is little theoretical support for the most traditional form of this view; no current theory posits the conscious study of grammar as either a necessary or sufficient condition for

language learning. However, Bialystok (1978) has provided a theoretical framework that allows a role for conscious knowledge, and Rutherford and Sharwood Smith (1985) have argued that 'consciousness raising', drawing learners attention to the formal properties of language, facilitates language learning.

According to Schmidth (1990) consciousness is been categorized into three levels,

Level 1: Perception.
 It is generally believed that all perception implies mental organization and the ability to create internal representations of external events (Oakley 1985b; Baars 1986). However, perceptions are not necessarily conscious, and subliminal perception is possible.

Level 2: Noticing {focal awareness).
Bowers (1984) points out the crucial distinction between information that is perceived and information that is noticed. When reading, for example, we are normally aware of (notice) the content of what we are reading, rather than the syntactic peculiarities of the writer's style, the style of type in which the text is set, music playing on a radio in the next room, or background noise outside a window. However, we still perceive these competing stimuli and may pay attention to them if we choose.

There are a variety of terms for what is called noticing, including focal awareness (Atkinson and Shiffrin 1968; Kihlstrom 1984), episodic awareness (Allport 1979), and apperceived input (Gass 1988). What these constructs have in common is that they identify the level at which stimuli are subjectively experienced.

When problems of memory and metalanguage can be avoided, verbal reports can be used to both verify and falsify claims concerning the role of noticing in cognition.

Level 3: Understanding.
Noticing is the basic sense in which we commonly say that we are aware of something, but does not exhaust the possibilities. Having noticed some aspect of the environment, we can analyze it and compare it to what we have noticed on other occasions. We can reflect on the objects of

consciousness and attempt to comprehend their significance, and we can experience insight and understanding. All of this mental activity—what we commonly think of as thinking—goes on within consciousness. Problem solving surely represents a continuum (Bialystok and Bouchard Ryan 1985; Karmiloff-Smith 1986). Whatever point on the continuum is considered to differentiate implicit from explicit knowledge will largely determine the extent to which second language knowledge is said to be conscious or unconscious, but a careful reading of the second language literature indicates no consensus on where the line is to be drawn (Odlin 1986).

Whether second language learning is conscious or unconscious it reflects several different contrasts:
(1) Learning is sometimes said to be unconscious when the learner is not aware of having learned something. This is an interesting notion, based on the concept of reflexive self-consciousness, but not one on which there has been much research.

(2) The conscious/unconscious learning contrast may refer to awareness at the level of noticing. In this sense, unconscious learning means 'picking up' stretches of speech without ever noticing them. This is a crucial issue, which should be referred to as the subliminal learning question: is it possible to learn aspects of a second language that are not consciously noticed?

(3) Conscious and unconscious learning may be distinguished on the basis of intention and effort. This is the incidental learning question: if noticing is required, is such noticing automatic or must learners consciously pay attention?

(4) The contrast may also be made with reference to awareness at the level of understanding. In this sense, unconscious learning means the unconscious induction of principles, rules, or algorithms, whereas conscious learning means the establishment of such principles based on insight.

(5) Conscious learning may also be taken to refer to intentions at a more global level, learning according to a deliberate plan involving study and other intentional learning strategies. Unconscious learning, by contrast, may be seen as an unintended by-product of communicative interaction. Of course, such learning might still involve noticing and understanding.

(6) Finally, conscious learning may be referred to the issue of conscious knowledge; can learners say what they appear to 'know'? (Knowledge is represented as the environmental input in the following diagram)
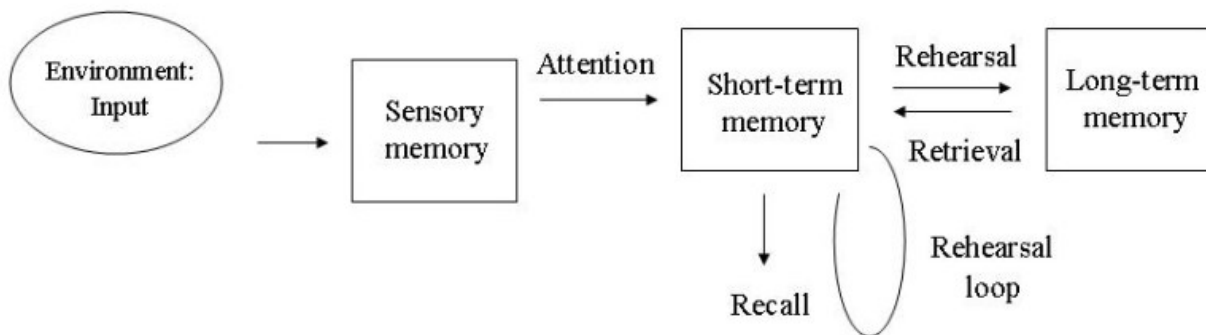
Figure 1: *A diagram of Atkinson and Shiffrin's multi-store model of memory*.

The former diagram of Atkinson and Shiffrin is representing the adjacent relationship of memory and consciousness in contribution to the process of acquisition of a new Language.

The research is trying to state a system to measure the process of acquisition with a framework that is been used for assessing languages' acquisition, which is the MOGUL.

MOGUL Framework

MOGUL stands for Modular On-line Growth and Use of Language (Truscott & Sharwood Smith 2004a, 2004b). It is not a theory per se but rather a theoretical framework for interpreting research on language development within a broad cognitive-science perspective. It may also be thought of as a research program. MOGUL has already been used to re-examine and reinterpret concepts such as transfer (Sharwood Smith & Truscott 2006) and optionality (Truscott 2007).

According to Jackendoff's basic processing architecture of language, his view of the language module has two main subcomponents of the module controlling, respectively phonological and syntactic structure. This means that the module is itself modularized with phonology and syntax as independent and equal partners (Jackendoff 1987). The phonological (sub) module deals uniquely with phonological structure(PS) and can do nothing else while syntax is processed separately, also in its own unique terms. The outputs of each subsystem, phonological and syntactic structure (SS), need to be chained together to create part of a linguistic representation on-line. This chaining is effected by interface processors whose job it is to a) match up the output of the two linguistic subsystems with each other and b) to match up these linguistic outputs inside the language module with elements outside it, that is to say, outputs underlying meaning (conceptual structure CS) at the higher level, and with peripheral systems involved in speech, signing and writing at the lower level.

The system is bi-directional, the language module as represented here works both for building a representation in production and also in comprehension. The processing differences between the two are essentially in what happens outside or beyond the operations of the language module itself so, of course, production and comprehension processing, taken in their totality, are different.

The MOGUL framework, allows a recasting of questions that are regularly asked about the ways in which language acquisition can be supported or facilitated (Doughty and Williams 1998, Izumi 2003, Mackey 2006, Van Pattten 1990, 1996, Van Patten and Williams 2007). Firstly, it should be clear that focusing on form is focusing on the visual or auditory precursors of linguistic structures and not directly on linguistic form itself. What has also been called 'input enhancement' (Sharwood Smith 1993) involves various techniques employed to make salient given features of the language to which the learner is exposed. This still means influencing the way in which the learner constructs perceptual output structures (phonological representation and not linguistic structures (PS or SS). We can make certain things more perceptible and by so doing provide the learner with a clearer, more stable perceptual platform for the language module to operate on.

In a modular account of cognition, each module has its own function and unique set of operating principles, i.e. its unique 'code', which makes the overall architecture of cognition look very complex. There is also simplicity in this architecture, however, since all (modular) cognitive processing follows the same generic pattern of having 1) an integrative processor unique to that module whose job is to process whatever elements appear in its working memory plus 2) a memory store and 3) interface processors enabling cross-matching with elements in adjacent modules.

Although, in MOGUL, we are treating modules as processing units, another way of looking at the internal structure of a module is to consider the relationship between processing systems and competence systems (in Chomsky's sense of competence).(Sharwood Smith 2009)

There are two hypotheses that are integral to MOGUL in its current form, both having to do with the concept of activation. The first is the Activation Hypothesis (Baars 1988 and the second is APT, the Acquisition by Processing hypothesis (Truscott and Sharwood Smith 2004a). The

Activation Hypothesis is directly to do with the issue of consciousness and suggests that at least part of the explanation of conscious experience has to do with the activation of elements in memory beyond a certain threshold, an idea that is quite common in theories of consciousness (Baars, 1988, Paradis 1993). The Acquisition by Processing Hypothesis holds that, within the modular architecture adopted in MOGUL, elements of memories (structures) that are invoked or created during attempts to process language on-line, acquire a given resting level that determines their basic availability for selection in subsequent parses. The more the same structures are selected in future parses, the more established they become, that is to say, the higher their resting level of activation becomes.

MOGUL would limit any awareness to awareness of the sound or image of a word (or gesture and facial expression in the case of signing, or touch in the case of Braille). In other words we can only become aware of certain perceptual structures, the precursors of linguistic structure. We cannot become aware of the linguistic structure itself, or put more precisely, of PS and SS. Also, since awareness is generally thought of as admitting of different degrees, then we can both be peripherally aware of a relevant perceptual structure, that is, an AS or VS (but not the PS or SS they are linked with) and we can also be focally aware of highly conscious of an AS or VS.

The generally observed failure of learners to automatically respond to focus on form in such a way as to acquire grammatical structure in the long term (that is ignoring any strictly short term learning effects following some experimental methods) could be explained by the in-principle impossibility of direct access (in terms of awareness) to phonological and syntactic structure. We have the illusion of being aware of linguistic structure because we can be aware of its perceptual correlates.

A modular, domain-specific account explains why this feeling of observing linguistic structure is in fact an illusion and that learning grammar (including) phonology is not as straightforward as its seems it should be. To take awareness of language as an object first, being aware that, for example, 'When are you going to stop reading?' a) is a stretch of language, b) is a question, c) consists of seven words and d) is an example of subject-auxiliary inversion is an experience usually qualified by the term 'metalinguistic'. MOGUL needs to be able to supply a coherent account of metalinguistic awareness as much as any other kind of awareness. It does so in terms of conceptual structure. That is, the language user builds up knowledge about language in CS with links to the perceptual precursors of linguistic structure namely AS (spoken utterances and segments of utterances) and VS (written or signed utterances and segments of utterances). In this way, knowledge of language can be built up outside the language module. An obvious example of this would be an extensive, analytic knowledge of a dead language like Latin or Ancient Greek. However, it includes all the knowledge about our first and other languages that we acquire as a result of formal instruction or self-study from very early on in primary education to the more sophisticated forms of metalinguistic knowledge acquired in adulthood.

Take the notion of a word for example. We have seen that, in one sense, words as such do not exist. They are chains or networks of structures part of which may correspond more or less to our metalinguistic notion of a word and we can certainly relate 'words' to identifiable structural elements in phonology or morph-syntax. However the word as a unit comes into its own as a concept (in CS) and is identifiable as an auditory structure (AS) like /step/ or /wen/ or, since we

are literate beings, as visual structure (VS), a sequence of written characters with a space on either side like ' s e t ' or ' w h e n '. In this way, as we progress through life, we develop linguistic knowledge of two types, one as a result of the activity of the language module and another as a result of linking forms and meaning outside the language module. We do the latter together with a set of auxiliary (metalinguistic) concepts like word, syllable, word order, question constructions, adverb, preposition and so on all of which enable us to place these perceptual form-meaning pairs in a broader conceptual context and thereby submit them to various kinds of analysis. Interestingly, whereas the linguistic knowledge developed via the language module can never be wrong or right - it is just the way it is- the manner in which language is developed meta-linguistically can indeed be submitted to value judgment. This means that asking an L2 learner for an intuitive judgment about a question like 'What you are doing?' will elicit a response, you hope, that reveals something about the way questions are represented in that learner's current L2. It may or may not be native-like but it is simply the way the learner handles questions at the time of asking. In itself, it is neither right nor wrong. If we then say that this sentence is 'wrong' or 'non-native-like', we are making a separate, metalinguistic statement about that sentence which can be tested and judged as true or false. We can also develop an analysis which can be tested and assessed as wrong or right such as an analysis yielding the statement 'all questions in English require subject-verb inversion'.

MOGUL can provide an account supporting the view that there are two separate types of linguistic knowledge that exist alongside each other (Krashen 1981, Schwartz 1986). Knowledge acquired via the operation of the language module is developed from an early age as a result of mandatory processing. As Fodor (1983) pointed out working with his particular view of modularity, choose not to process language to which you are exposed. In terms of the MOGUL framework used here in which acquisition is carried out via the activities of the parser, you can also not choose to acquire or not to acquire language except by avoiding situations where you will be exposed to speech or writing. However, knowledge acquired outside the language module as currently conceived will not develop automatically on exposure to language but typically requires training and reflection if it is to rise beyond a basic level of metalinguistic awareness without much analysis.

The MOGUL framework as currently conceived can provide a richer set of concepts and a terminology to spell out more precisely ideas, claims and hypotheses that have been advanced in language acquisition over a period of time. The terms and concepts are derived from, in particular, research in linguistics, cognitive psychology and psycholinguistics. As such they should in principle possess some cross disciplinary authority and usefulness. The issues chosen here to illustrate how the MOGUL program can be applied have centered round the question, familiar enough in second language acquisition research at least, of consciousness and its possible role in influencing linguistic development of new language systems in the mind of the language user. A picture has been presented of two language knowledge systems possessed by all kinds of language user and language learner. The two knowledge systems are essentially different. (Sharwood Smith 2009).

Conclusion

The research paper is striving to collect information from different sources to illuminate the path of knowledge for a new trend in acquiring the second language with a remarkable help of the two vital elements of working memory and consciousness. Those essential elements have been vaguely involved in the curricula of language acquisition as much to the educators. The more given knowledge about those elements the more skillfully designed learning programs would emerge. Implementing and immersing them academically, would hopefully antedate a successful extraordinary results to the learning processes and the learners. The role of assessing is recommended to continue applying the process, as a checkpoint, the mogul framework is highly advisable to measure the acquisition and reform any inconveniences to straighten the road of success.

References

Atkinson, R. C., & Shiffrin, R. M. (1968). Human memory: A proposed system and its control processes. In K. W. Spence & J. T. Spence, The psychology of learning and motivation: II. Academic Press. https://doi.org/10.1016/S0079-7421(08)60422-3

Baars, B. (1988). A cognitive theory of consciousness. New York: Cambridge University Press.

Baddeley,A. & G Hitch - Psychology of learning and motivation, 1974 – Elsevier

Baddeley, A. (2016) .Working Memory (Oxford Psychology Series, No. 11)

Baddeley,A.(2016-2000) Working Memory and Reading Difficulties: What We Know and What We Don't Know About the Relationship.VL - 19-DO - 10.1007/s10648-006-9024-1-JO - Educational Psychology ReviewER

Bialystok, E. 1978. 'A theoretical model of second language learning.' Language Learning 28:69-84.

Cowan, N., Rouder, J. N., Blume, C. L., & Saults, J. S. (2012). Models of verbal working memory capacity: What does it take to make them work? Psychological Review, 119(3), 480–499. https://doi.org/10.1037/a0027791

Cowan, N. (2014). Working Memory Underpins Cognitive Development, Learning, and Education. PMC4207727- Article Pub-Reader PDF–741KCite.

Dehn, M. J. (2008) Working memory and academic learning: Assessment and Intervention. New Jersey: Wiley and Sons.

Doughty, C., & Williams, J. (1998). Pedagogical choices in focus on form. In C. Doughty & J. Williams (Eds.), Focus on form in classroom second language acquisition (pp. 197-261). Cambridge: Cambridge University Press.

Fodor J. A. (1983). The modularity of mind: An essay on faculty psychology. Cambridge, MA: MIT Press.

Hopp, H. (2010). Ultimate attainment in L2 inflection: Performance similarities between non-native and native speakers. Lingua, 120(4), https://doi.org/10.1016/j.lingua.2009.06.004

Izumi, S. (2002). Output, input enhancement, and the noticing hypothesis: An experimental study on ESL gelatinization. Studies in Second Language Acquisition, 24, 541–577.

Jackendoff, R. (1987). Consciousness and the computational mind. Cambridge, MA: MIT Press.

Krishan, S.D. (1981). Second language acquisition and second language learning. Oxford: Pergamum.

Mackey, A. (2006). Feedback, noticing and instructed second language learning. Applied Linguistics, 27, 405-430.

Michael, A. & Sharwood Smith. The University of Edinburgh. Moray House School of Education M.A., Dep. Applied Linguistics, Ph.D.

Rutherford, W. and M. Sharwood Smith. 1985. 'Consciousness-raising and universal grammar.' Applied Linguistics 6:274-82

Savage,M. (2018),The role of memory in learning.

Sharwood Smith, M. (1993). Input enhancement in instructed SLA: Theoretical bases. Studies in Second Language Acquisition, 15, 165-179.

Sharwood Smith, M., & Truscott, J. (2006). Full Transfer Full Access: A processing-oriented interpretation. In A. Sorace & S. Unsworth (Eds.), Paths of development (pp. 201-216). Amsterdam: John Benjamins.

Schwartz, B.D. (1986). The epistemological status of second language acquisition. Second Language Research, 2, 120-159.

Schwieter, J. W., & Benati, A. (2019). The Cambridge handbook of language learning (Cambridge handbooks in language and linguistics). Cambridge University Press.

Schmidt, R., (1990), The Role of Consciousness in Second Language Learning. Applied Linguistics, Vol. 11, No. 2 © Oxford University Press 1990

Shoemaker, E. M., & Wauquier, S. (2019). The emergence of speech segmentation in adult L2 learners of French. French Liaison in Second Language Acquisition / La Liaison En Français Langue Étrangère, 10(1), 22–44. https://doi.org/10.1075/lia.17016.sho

Truscott, J. (2015). Consciousness in SLA: A modular perspective. Second Language Research, 31(3), 413–434.https://doi.org/10.1177/0267658315571195

Truscott, J., & Sharwood Smith, M. (2004a). Acquisition by processing: A modular approach to language development. Bilingualism: Language and Cognition, 7, 1-20.

Truscott, J., & Sharwood Smith, M. (2004b). How APT is your theory: Present status and future prospects. Bilingualism: Language and Cognition, 7, 43-47.

Truscott, J. (2007). Optionality in second language acquisition: A generative processing-orientated account. International Review of Applied Linguistics, 44, 311-330.

Uckachok,C., (2018). Sensory Memory in Psychology. Research gate net.

VanPatten, B. (1990). Attending to form and content in the input: An experiment in
consciousness. Studies in Second Language Acquisition, 12, 287-301.

VanPatten, B., & Williams. J. (2007). Theories in second language acquisition: An introduction.
New York: Routledge.

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The Use of Technology to Overcome Transitional Challenges of First Year Students From Face-to-Face to Online

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Abstract

Universities around the world and South Africa in particular have been involuntary forced to transit from face-to-face to online learning and teaching as a result of the nationwide lockdown due to the coronavirus pandemic (COVID-19). Online learning and teaching is classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. However, numerous challenges hinder First Year Students in transiting to the online platform to realising the full potential of e-learning, especially those from disadvantaged schools background considered as under prepared, educationally underprivileged and had little or no access and skills to technology usage prior to their enrolment at the university. This paper introduced a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. The main objective of this study was to provide students with basics training skills needed in terms of technology-related used to enable them to engage and participate effectively in the online platform. Data was collected among a group of first year students in the department of information technology systems in one rural institution in South Africa. The results show that the majority of learners have not used computers or had experience on technologies for teaching and learning in their previous schools. However, learners showed interest on basic IT training in terms of hardware functionality and software application to assist them carry out their academic tasks effectively. The study proposed that FeCOL should be used as a kick-start module to facilitate first year learners' transition from face-to-face to online.

Keywords: Online Teaching, E-Learning, Educational Technology, First Year Experience

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Introduction and Background

Universities around the world and South Africa have been involuntary forced to transit from face-to-face to online learning and teaching because of the nationwide lockdown due to the coronavirus pandemic (COVID-19). Online learning and teaching are classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. First-year students, particularly those from underprivileged schools' backgrounds who are underprepared, educationally underprivileged, and had little to no access to and skills with technology usage prior to their enrolment at the university, face numerous obstacles when transitioning to the online platform to realize the full potential of e-learning. Many of these students come from underprivileged rural settings, as a result their transfer into higher education has been negatively impacted because it is a difficult process that calls for learning new skills and adjusting to new academic and social environment. The disruption of schools during the outbreak of COVID-9, affected how we interact socially, and face-to-face activities were stopped and moved online (Pokhrel & Chhetri, 2021). The pandemic's severe repercussions are particularly noticeable in education especially contact schooling. The pandemic poses an opportunity and a problem for education, particularly in under resource institutions in Africa. The COVID-9 has distrusted traditional learning method also called face to face and prompted a shift to online teaching and learning activities (Daniel, 2020). Many higher education institutions have had to revaluate their methods of instructions and evaluation in the wake of the pandemic. According to Allen, Rowan, and Singh (2020, p.233), this fast transition "has led to greatly intensified workloads for teachers as they strive to not only migrate instructional content and materials into online platform, but also become skilled in navigating the needed software." The sudden and unanticipated switch to online learning also presented issues and obstacles for students especially those in their face year of study at university (Baticulon et al.,2021).

There is not much that is known about how prepares students are for real time online learning (Tang et al., 2021, Mbodila et al.,2016). According to the literature, transition is typically voluntary or planned on online teaching and learning, however, emergency transition, like the ne caused by the covid-19 pandemic, have a relatively small body of knowledge (Songca et al.,2021; Mbodila et al.,2016; Garca-Penalvo, Corell, Rivero-Ortega, Rodrguez-Conde, & Rodrguez-Garca, 2021). This study, intended to investigate how this transition affected first year student considering this being their first time to university and most of them novice in the use of online learning and teaching. Recent studies have indicated that a sizable proportion of students in higher education institutions have at least some challenges throughout their period of transition, but they also call for a multifaceted response from each individual confronting varied changes (Tang et al., 2021, Mbodila et al.,2016).

Studies have indicated that a sizable proportion of students in higher education institutions have at least some challenges throughout their period of transition, but they also call for a multifaceted response from each individual confronting varied changes (Mbodila et al.,2016). Various studies emphasized that the process could be experienced differently for each individual undertaking and contends that both high school performance and socioeconomic background have a direct impact on how well students integrate into university life (McInnis et al.,1995; Australian Government Publishing Service, 1995; Melbourne: Centre for the Study of Higher Education, 1996). According to a study done by Kauffman (2015), students perceive online course differently than traditional courses. Considering the above argument by Kauffman (2015), it is evident that face-to-face activities are different from online

activities, hence for new students there is a need for them to be prepare for these new changes. In this context it is significant to understand how the new introduced module (FeCOL) assists first year students in their transition from face-to-face to online platform at the university.

Literature Review

Digital literacy can be defined as the ability to retrieve and use information effectively through platforms such as search portals, databases, and related applications (Buckingham, 2010). In 21st century, students need to be inspired and prepared to acquire lifelong knowledge and skills in the learning environment as the world is advancing toward a technological driven society. Amongst this knowledge or soft skills, digital literacy is one of them. Long-term development is required for the concept of digital literacy to be understood and taken into consideration in school system all over the world. The COVID-9 pandemic has distrusted traditional learning method also called face to face and prompted a shift to online teaching and learning activities (Daniel, 2020). Many higher education institutions have had to reevaluate their methods of instructions and evaluation in the wake of the pandemic. Currently the use of modern technologies has changed and keep on changing the way we conduct businesses, live, communicate, work as well as the way the education is being conducted. Online learning and teaching are classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. It is known in the literature that online learning offers a learning setting that is different from face-to-face or classroom learning settings (Bazelais, Doleck, & Lemay, 2018). In terms of education, this abrupt change "has dramatically increased staff responsibilities as they struggle to not only migrate instructional content and resources into the online domain, but also become sufficiently skilled in navigating the needed software" (Allen, Rowan, & Singh, 2020, p. 233). Additionally, students had a tough time adjusting to the sudden, unannounced switch to online schooling (Baticulon et al., 2021). According to a study by Mbodila et al., (2016), 95% of students in rural university settings shown shortcomings in using technology for teaching and learning. While many of these universities have made significant investment and placed great value in enhancing teaching and learning using technology, it has been reported that the main barrier to providing students with digital literacy skills necessary for 21st century learning is a lack of critical technical skills and embracing e-learning innovation in basic education levels (Jantjies and Joy, 2016). This paper introduced a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. Hence, this study presents a developed module called FeCOL that assist students in fundamental use of technology to overcome transitional challenges of First Year Students from Face-to-Face to online.

Theoretical Framework to the study

This current study is framed on role-model theory, which was first put forth by Murphy et al., (2001). The adoption of this model was done in the context of this study to encourage student-student contact, particularly on a socio level, to foster a sense of belonging (Tinto, 1675). To make is possible students to interact in a way that would allay their worries while promoting structured learning in the process. In core, it was to empower students to participate in a relationship that would eliminate fears but encourages free learning practices (Mbodila et al.,2016).

Study Context

The South African higher education system serves as the case study's context. Due to institutions' disparate geographic locations, levels of resources, and cultural, racial, and political histories, there is a great deal of institutional inequality in South Africa (Leibowitz et al., 2015; Leibowitz et al., 2017). Many universities, including the current case study institution, cancelled face-t0-face lessons in response to the covid-19 pandemic and moved to online to continue tuition while keeping staff and students safe during the period of lockdown. According to the Higher Education Act 101 of 1997, as modified, the institution under case study was founded on July 1, 2005, because of the amalgamation of the previous Border Technikon, Eastern Cape Technikon, and University of Transkei. WSU has four campuses, each of which is run by a Campus Rector, and it is governed and managed by divisions (Songca et al.,2021). The four campuses are dispersed across four far-flung places in the South African Eastern Cape province: Mthatha, Butterworth, Buffalo City, and Komani (formerly Queenstown). The current study was conducted with a group of students at Komani Campus. Given its rural location, the institution is located the institution attract most black student from disadvantage background and schools. Challenges such as the use of modern technology, computer skills, and many others are amongst the major obstacle faced by many academics and students to integrate fully in an online platform (Songca et al.,2021). Prior covid, students use to have a kick start training on computer literacy, however, during lockdown there was not contact training for student. To overcome these challenges, an introduction of a new module (FeCOL) was created to assists first year students in their transition from face-to-face to online platform at the university.

Methodology

This study employed quantitative approach model to collect data from students. According to Prensky (2001), quantitative approach involves the description of events using statistical data and mathematically based analysis. For data collection, an online questionnaire was developed with semi-structures questions and opinion statements was used to collect data. Each question was designed to elicit information about how students have been using technology and computer devices, their experiences on the use of computer application and software, their skill levels as well as training needs as they are transiting from high school to university. The aims of these questions were to identify the gaps and see how to put in place mechanism that will assist them in their transition. The link was sent to the participants and data collected were analyzed and presented in this paper.

General Distribution of respondents and previous school attended

An online survey was completed by the participants and their responses were gathered and presented in this section. The completion of the online survey was entirely optimal and anonymous. the total number of Participants were N=79 first year students from the department of information technology systems in the university under case study. The distribution of participants analyzed and presented in the below section. As shown in figure 1, the distribution in term of gender. The majority of respondents are female about 53.2% and male are 46.8%.
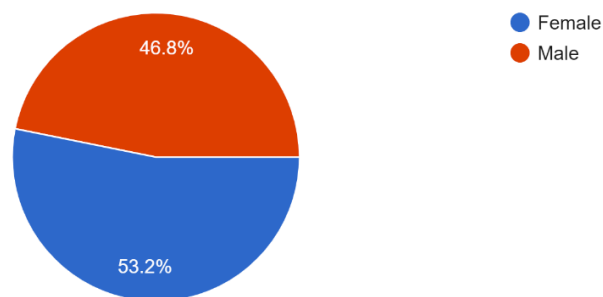
Figure 1: General Distribution of Respondents

Further there was a need to find out their provinces of previous high school attended before joining the university. Figure 2 shows that the majority of students attended schools in rural settings about 59% villages, 5% in informal settlement, 3% farm or small holding and 22% townships attended townships schools. This shows that a total of 89% of students attended rural schools which is characterizes by disadvantages and under resources. Only a small portion of students attended schools in town 5%, suburb 5% and inner city 1%. These findings shows that the majority of first year student at the institution comes from rural settings and this have a direct impact in their transition from face-to-face to online since most of these schools are under resources.
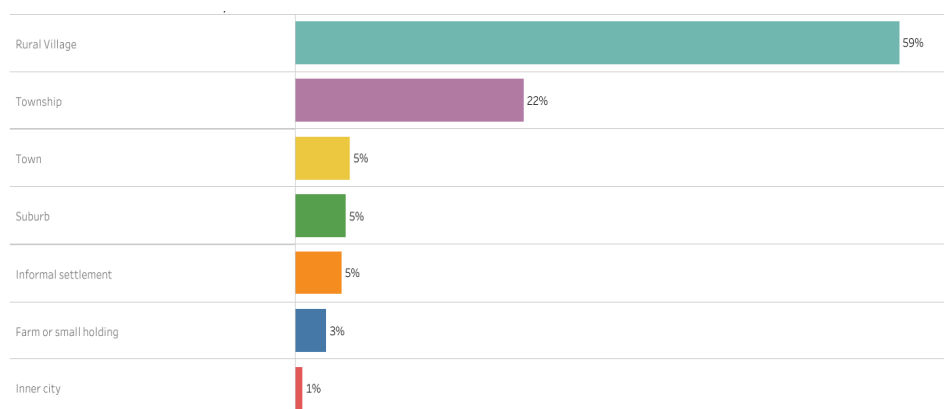
Figure 2: Previous High S0chool Attended

The researcher further decided to elicit information on the participants familial educational background in terms of "generations" to discover more meaning information about the learners. Figure 3 shows that, the majority of these student were first "generation students" in their families to attend university or college (Mbodila et al.,2016; Lowe-McConnell, 2002). In this context first generation refers to students whose parents or family members have never attended college or university (Lowe-McConnell, 2002). These students are more likely than average to drop out of school and academic support in their family is likely to be low. Hence, there was a great need to support them in transiting from face-to-face to online teaching and learning.

Figure 3: Family Educational Background

Results and Data Analysis

The researcher goes on to determine whatever technologies the participants have or have been utilized based on the results of the educational and family background. This is seen in Figure 4, which shows that the most of them were owning a smartphone about 92.4%.
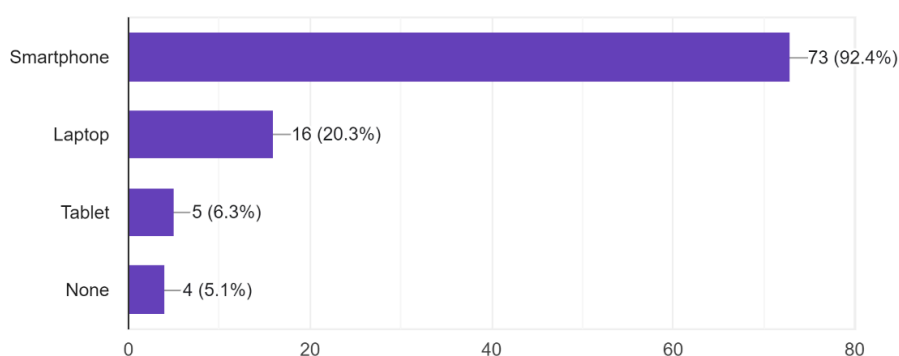
Figure 4: Device Ownership

It makes sense that the participants ability of owing a smartphone would make them able to access the internet and some application that are used on a smartphone. This indicate that student had knowledge of the use of internet as shown in figure 5, whereby participants have indicated with about 56% of them have previous training on internet usage.
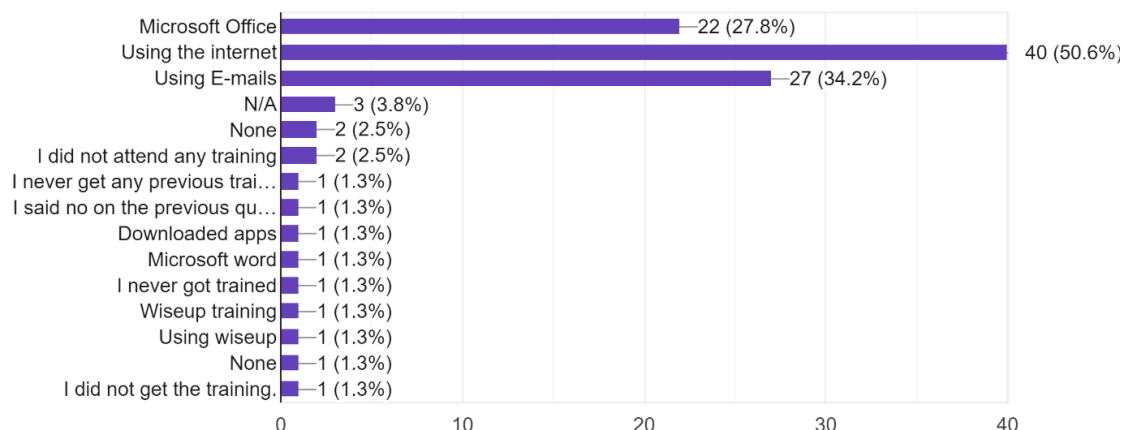
Figure 5: Previous Training on Computer Application Software

Technology Usage and skills in the Context of Learning and Teaching

Students were questioned regarding their training prior university on the use of computer and various application for learning and teaching in order to determine their strength and shortcoming in the use of modern technology in process of learning and teaching. The purpose of this question was to give the research an idea wat what is needed for these students to be reading in their transition. Figure 6 shows the findings.
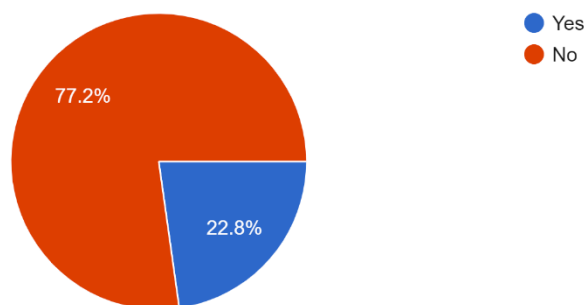
Figure 6: Previous Computer Training

About 77.2% of participant responded that they never had a computer training or a form of computer literacy training prior their admission at the university. Only 22.8% responded positive in this question. The use of computer was the crucial for this student transition from face-to-face to only teaching, however this was not possible since a big number of them were not trained in the usage of computer for the purpose of teaching and learning. Any LMS integration was going to be in their disadvantage. This question was giving a full view of student's profile in technologies related knowledge and skills to give the research an idea of the type of students that the institution has and the type of intervention that can be put in place to assist them adapting quick during covid-19 pandemic transition.

In order to provide necessary support to assist students in the transition during Covid-19 pandemic in the use of technology to overcome their transitional challenges from Face-to-Face to online, a question to determine their training needs and the type of training needed was vital for the research to come up with a proposed design for the module or a model for the intervention. A question on the type of training that they would like to have been asked and figure 7 displayed the results.
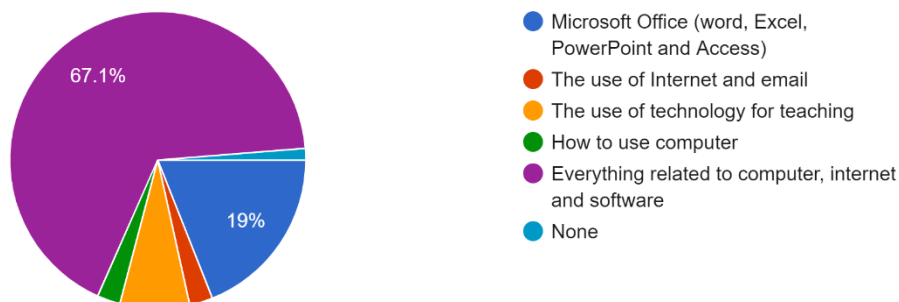
Figure 7: Training Needed for Students

The finding indicated that 67.1% of the participants, would like to be trained in everything related to computer, internet, and software. 19% of them would like to be trained on Microsoft office package such as excel, word, PowerPoint etc. 11% of the participant would like to be trained on the use of technology for teaching and learning. These responses give the research an idea of the type of support that can be developed by the institution to assist these types of learners before starting online classes. According to the finding, participants showed interest on basic training in term of computer and software to help them carry out their studies effectively online.

Proposed First Experience Computer Literacy Module (FeCOL)

According to the study done by Mbodila et al., (2016) at UNIVEN, it shows that about 95% of first year students in that institution indicted interest in computer literacy training to get them integrated into the university technology-based system. The same study revealed that the majority of these students were coming from rural settings schools which was under resources. The researcher in that study proposed FeCOL module a way to mitigate first year integration into technological related module at the institution. However, the proposed designed was never tasted or implemented to see its effectiveness in assisting students to overcome their technological challenge in their transition.

Looking at the finding of this current study, from figure 1 to 7, the percentage of respondents came from various high schools in rural settings that are under resources. In addition to that, a large percentage of these participants are first member of their family enroll to the university. Looking at the settings of both universities and the type of student that they admitted, there is quit a similarity. Hence, its was important to adopt the same proposed module (FeCOL) as an intervention to assist students overcoming their transitional challenges from face to face to online learning and teaching during covid-19. The components and design of the proposed module is presented in figure 8 and elaborated in detail in the following section.
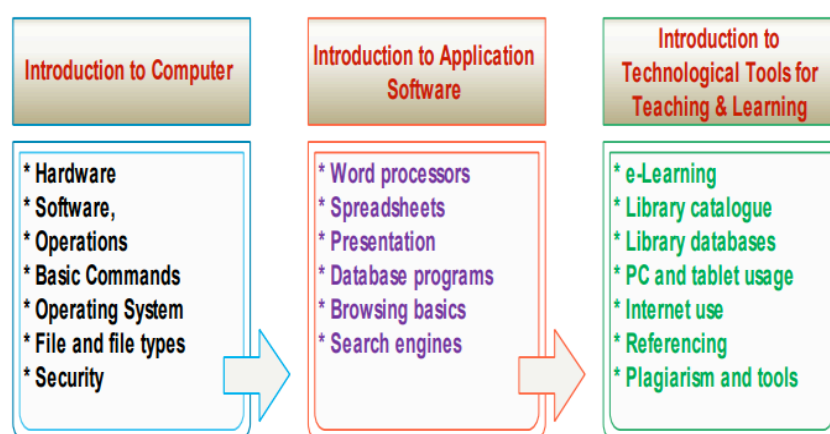
Figure 8: FeCOL Module Components (Mbodila et al.,2016)

The designed FeCOL module was therefore implemented to assist first year students and was divided in three components, namely: introduction to computers, introduction to application software, introduction to technological tools for teaching and learning. As shown above inf figure 8, the design of the module in the context of the university under case study reflect as a kick start computer literacy module that carter for fundamental student's needs and an introduction to technological tools used for research, teaching, and learning, as well as the

campus intranet, were combined to create the course materials for WiSeUp (Mbodila et al.,2016).

Student feedback on Experience Computer Literacy Module (FeCOL

Following the intervention, there was a need to find out student satisfaction on the intervention after the training that was during online classes. The aims of this feedback were to determine if the intervention that was put it in place was effective and helpful for students to overcome challenges during this transition from face-to-face to online learning and teaching during Covid-19. Figure 8 shows participants feedback on their level of satisfaction.
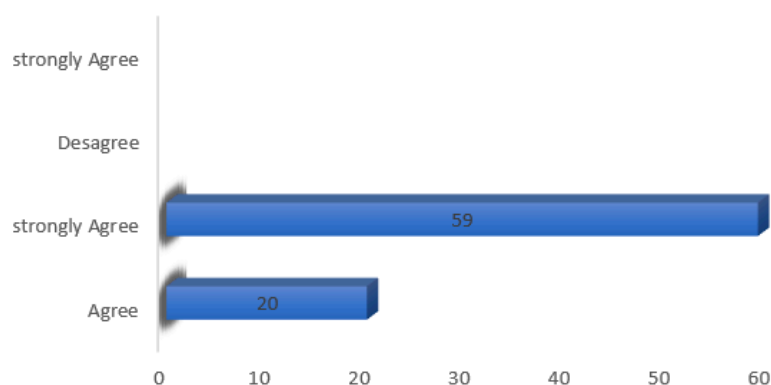
Figure 9: Students Feedback

As its can be seen from above figure, first year students were satisfied in the intervention and indicated them ever of agreement. About 75% of participants strongly agree that the intervention assisted them to overcome basic challenge in adjusting from face to face to only. And 25%, agreed that also in that. This shows that the level of satisfaction from students were good, and this shows a positive attitude for the side of the students.

Conclusion

This paper assesses first year students' usage and knowledge on their computer related skills to introduce a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. The main objective of this study was to provide students with basics training skills needed in terms of technology-related used to enable them to engage and participate effectively in the online platform. From the data that was collected its shows that first year students have challenges in computer related skills and usage of modern technology due to their educational background prior university. These students were surveyed and their profiled were gathered to determine their readiness in overcoming transitional challenges during covid-19. The results shows that most of these students were coming from rural school with little or no technological training and support. To assist them in the use of technology to overcome transitional challenges from Face-to-Face to online during Covid-19, FeCOL was introduced, and students were satisfied in the support that they received. It is event that this module will be use beyond the pandemic, to assist student who have difficulty to adopt modern technology usage in learning and teaching at the case study institution.

References

Allen, J., Rowan, L., & Singh, P. (2020). Teaching and teacher education in the time of COVID-19. Asia-Pacific Journal of Teacher Education, 48(3), 233–236. https://doi.org/10.1080/1359866x.2020.1752051.

B. Jones, G. Coetzee, T. Bailey and S. Wickham, "Factors that facilitate success for disadvantaged students: An investigation into approaches used by REAP, NSFAS and selected higher education institutions", Cape Town: REAP, 2008

Baticulon, R., Sy, J., Alberto, N., Baron, M., Mabulay, R., Rizada, L., et al. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. Medical Science Educator, 31(2), 615–626. https://doi.org/10.1007/s40670-021-01231-z.

Bazelais, P., Doleck, T., & Lemay, D. J. (2018). Investigating the predictive power of TAM: A case study of CEGEP students' intentions to use online learning technologies. Education and Information Technologies, 23(1), 93–111. https://doi.org/10.1007/s10639-017-9587-0.

Buckingham, D., 2013. Is there a digital generation?. In Digital generations (pp. 13-26).

C. McInnis, R. James, and C. McNaught. (1995) First year on campus: diversity in the initial experiences of Australian undergraduates. Canberra: Australian Government Publishing Service, 1995

Daniel, S. (2020). Education and the COVID-19 pandemic. PROSPECTS, 49(1–2), 91–96. https://doi.org/10.1007/s11125-020-09464-3.

Jantjies, M. and Joy, M., 2016. Lessons learnt from teachers' perspectives on mobile learning in South Africa with cultural and linguistic constraints. South African Journal of Education, 36(3).

Leibowitz, B., Bozalek, V., Farmer, J., Garraway, J., Herman, N., Jawitz, J., Mc Millan, W., Mistri, G., Ndebele, C., Nkonki, V., Quinn, L., Van der Merwe, S., Vorster, J. & Winberg, C. (2017). Collaborative Research in Contexts of Inequality: The Role of Social Reflexivity. Higher Education, 74, 65-80. https://doi.org/10.1007/s10734-016-0029-5

Leibowitz, B., Bozalek, V., James, G., Nicoline, H., Jeff, J., Muhuro, P., Ndebele, C., Quinn, L., Van Schalkwyk, S., Vorster, J-A. & Winberg, C. (2017). Learning to teach in higher education: An investigation into the influences of institutional context on the professional learning of academics in their role as teachers. Pretoria: Council on Higher Education.

Lowe-McConnell, R.H., "Cichlids all! With an ecological view of African cichlids". Environ. Biol. Fish. 63(4):459- 463, 2002.

M. Prensky, "Digital Natives, Digital Immigrants: Part 1". On the Horizon, 9(5), 1 – 6, 2001

Munienge Mbodila, Isong Bassey, Muhandji Kikunga, Langutani Masehele,"On Overcoming Transitional Challenges of First Year Students in Technology-Based Educational Settings", International Journal of Modern Education and Computer Science (IJMECS), Vol.8, No.11, pp.28-35, 2016.DOI: 10.5815/ijmecs.2016.11.04

M. Peel, "Studying the Transition from year 12 to the first year of Higher Education", (1996) Proceedings of the 2nd Pacific Rim Conference on the first year in Higher Education, Melbourne: Centre for the Study of Higher Education, 1996

RoutledgePokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. Higher Education For The Future, 8(1), 133–141. https://doi.org/10.1177/2347631120983481

Songca, R.N., Ndebele, C. & Mbodila, M. (2021). Mitigating the Implications of Covid-19 on the Academic Project at Walt er Sisulu Universit y in Sout h Africa: A Proposed Framework for Emergency Remot e Teaching and Learning. Journal of Student Affairs in Africa, 9(1), 41-60. DOI: 10.24085/jsaa.v9i1.1427

Teaching Real-Time Programming for Embedded Microcontrollers by Using Cloud-Based Simulator

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Abstract

In "normal" times, students of electronic department enrolled in the course "Real-Time Digital Signals Processing" (RT-DSP) use real hardware – dedicated development boards containing microcontrollers and additional electronic components, and dedicated software (installed on the personal computer) to program those development boards. However, because of COVID 19 limitations, the distribution of development boards and dedicated software to the students became problematic. Even more, technical assistance in case of installation and/or hardware problems became practically impossible. Learning real-time algorithms and their practical implementation is an important part of Electronic Engineer's education; hence, it was decided to adapt the RT-DSP course to distant learning by using a cloud-based TinkerCad simulator. It was found that by using some tricks and simplifications, reasonably sophisticated electronic projects can be implemented. Additionally, it was found that the cloud-based TinkerCad simulator can run in parallel with the ZOOM session, while the Internet speed of the lecturer's computer is at least 50 Mbps – which means that providing frontal lectures and exercises (containing plain PowerPoint presentations and live simulations demonstrations) is feasible, at least for the groups of 30 students. After evaluating and grading homework and micro-projects created by students in the frames of this course, we may conclude that the professional level of the designed systems is good enough to continue this course in the frames of distant learning, in case "normal" options are not available.

Keywords: Real-Tine, DSP, TinkerCad, STEM, Cloud-Based Education

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Introduction

Classical course RT-DSP (RT stands for Real-Time, whereas DSP stands for Digital Signal Processing) is "*a hard to learn course*" for advanced electronics engineers. It is provided after students of the electronics department learn basic math and physics (including complex numbers and Fourier Transform), and, after they have learned basic analog and digital electronics and basic programming (preferably C language). RT-DSP mainly is about the following items: how to make the acquisition of analog voltage signals from different sensors (for example, from microphone), how to use ADC (Analog to Digital Converter) to convert analog voltage signal to digital signal (sequence of numbers that can be stored in the electronic memory), how to use microcontrollers to do an acquisition, how to process digital signals practically (for example clear human speech from the street noises), and how to do all above fast enough by using specially designed microcontrollers. "Fast enough" in the content of RT-DSP means: in accordance with exact timing criteria described in technical terms for the specific application.

Providing the RT-DSP course is an obvious "pedagogic challenge. Some of the goals of this course are: to fortify the theoretical basis learned in the prerequisite courses, explain a set of classical DSP algorithms (like filtration by convolution and by using FFT (Fast Fourier Transform)), and explain using of advanced RT concepts (like timers, hardware interrupts, ring buffers, dual-buffer techniques, Q-Numbers). However, learning a "theory only" is not enough for the modern electronic engineer. Hence, additional goals here are: to equip the students with "tools" needed to acquire, at least, minimal practical experience: how to implement classical DSP algorithms by using advanced RT concepts while using real electronic components and development boards, and by using modern software development and simulation tools.

In the routine work, an electronic engineer typically uses specially designed "development boards". Those boards have some set of electronic components, which set is supposed to be adequate to design a DSP system in accordance with the customer' requirements. These days those development boards can be programmed by a connected to them PC. Obviously, professional "development boards" are too sophisticated and too expensive for most universities and colleges. Hence, simplified "development boards" are to be used in the frames of RT-DSP courses.

Literature Review

Considering that the DSP course is a classical course for the electronic engineer, many articles and reports on the scientific conferences were dedicated to the details of teaching this course. Many educators strongly believe, that dealing with real electronic components (like amplifiers, microcontrollers, ADDC, DAC) is a must for the course of that kind (Nikolic, 2015). Some educators use only mathematic tools to demonstrate usage of the typical DSP algorithms: "A substantial amount of effort from the teacher is required to deliver mathematical and algorithmic concepts", hence "specially designed Windows Store App can be used as a teaching aid for an introductory undergraduate DSP course" like "linear convolution, circular convolution, radix-2 Fast Fourier Transform (FFT), and Finite Impulse Response (FIR) filter design" (Diya, 2017). The above authors use non-electronic software emulation of a "hypothetical 16-bit floating-point digital signal processor, with a simple instruction set". Considering that software-based electronic simulators our days arrived to high fidelity, many educators started to use dedicated electronic simulators and software tools

(like LabView) for electronic courses (Yi, 2005). Some educators promote the "remote laboratory" concept, according to which, students remotely operate specific electronic equipment positioned in the "normal" electronic laboratory. (Auer, 2000). Taking into account that the DSP course contains a lot of sophisticated math, and, thus, is not simple for many students, many educators promote "project-based" learning (Hoffbeck, 2012).

Providing RT-DSP course without dedicated in-campus laboratory

If the lecturer decides to use nearly professional "development boards", then dedicated for this course class with proper professional and expensive equipment must be organized. In the Braude Academic College of Engineering, there is a deficit of non-occupied rooms, so that organizing a dedicated laboratory for the RT-DSP course was not an option. Hence, it was decided to prepare kits containing inexpensive "development boards" and additional electronic components. At the beginning of the semester, students are organized in pairs, and, every pair get the kit up to the end of the semester. Then, by using those kits, students implement the assignments in their homes. This decision about kit distribution eliminates the need to reserve the full-fledged RT-DSP laboratory.

Figure 1 demonstrates the components of the kit. The kit is stored in the durable box of the popular EasyPic Fusion V7 development board (see callouts 1a and 1b). When the box arrived from the factory, it contained many documentation leaflets and electronic components. As for the documentation – it is available on the Internet, so that there is no need to give "paper-based" documentation to the students. Most of the electronic components that are part of the box are not needed for this specific course, hence students did not get them. The main element of the kit is EasyPIC Fusion v7 development board (Callout 2 in Figure 1). "Easy" in the name of the board means that using of this board is not as complicated as using professional development boards. Additionally, "easy" in that case means that configuration for the different projects can be set by jumpers on the board and by software. Callout 2a points to the color 320x240 TFT screen. Usage of this screen enables to ask students to prepare applications that present graphically as input signals, as signals processed by a specific DSP algorithm.
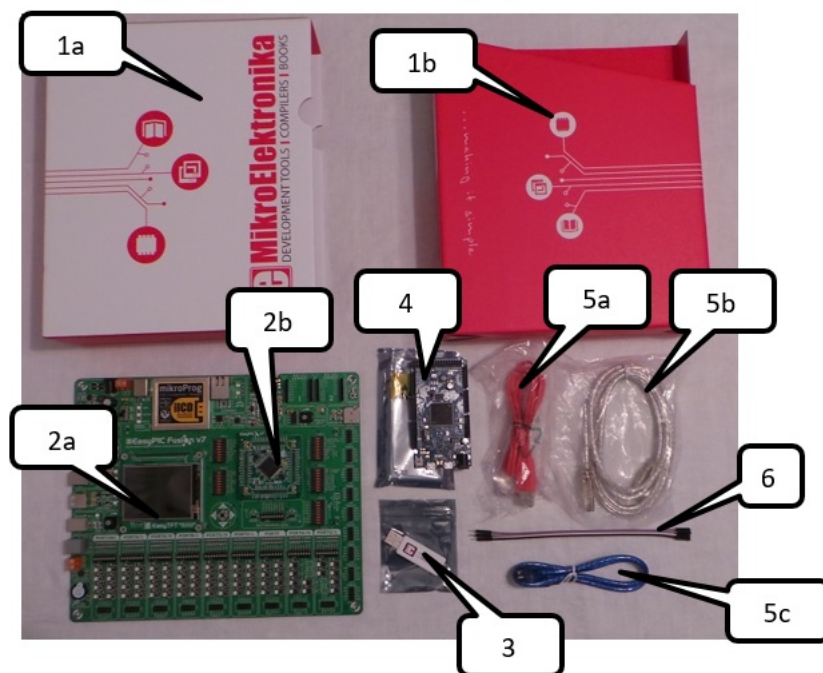
Figure 1 Components of the RT-DSP kit

Callout 2b points to the sophisticated DSP processor (PIC32MX795F512L MCU board). Additionally, the kit contains a "USB Dongle" (Callout 3). In order to program this board, it must be connected to the PC by using the standard USB cable (5a or 5b). Then special software ("Easy PIC compiler") must be downloaded and installed on the PC. This compiler can work without the board and without the dongle, but only in debug mode. Surprisingly, this feature was found extremely useful in the frames of this RT-DSP course. A student in the specific pair, which is currently without the board, can still write a code of some function and check how much time is needed for every line of the code. Then different algorithms can be compared relative to their time efficiency. Additionally, it can be decided whether the selected algorithm can be considered as a real-time algorithm by taking into account data type and size and the algorithm selected. By inserting simple screenshots of the compiler ' windows into assignment' report, students can prove that the algorithm they selected and implemented as C-code can be considered as real-time code in this specific situation. Additionally, students may be asked to find "the limits" of the application created. Actually, this usage of the compiler can be considered as a simulation with special features, and, as such, will be used in situations when the development board cannot be given to the students. The development board can be programmed without the USB Dongle, but in that case, only simple applications can be created. The normal situation is when the board is connected by USB cable to one USB port of the PPC, whereas the USB dongle is inserted into another USP port of the same PC.

While using the compiler in the "debug" mode, the input signal can be created by some software procedure. For example, a pure sinusoidal signal (or any other signal) can be created as an array filled by proper values calculated inside the "for loop". Then, this "synthetic" signal can be used as an input to the RT-DSP algorithm under the test. The advantage of this approach is that the input signal is "clean" and has no noise. In the "classical" electronic laboratory, an input signal is typically created by the dedicated Signal Generator. Despite the fact that a simple signal generator can be assembled from a small number of electronic components, it was decided to use the "Arduino DUE" development board as a "software-

defined signal generator". This usage is possible because Arduino DUE has two DACs, so that students can write simple code that creates the input signal as values in an array in Arduino DUE memory and then connects DAC pins of Arduino DUE with ADC pins of the EasyPIC development board. Figure 2 demonstrates the simple connection of the Arduino DUE Development Board (on the right) to Easy Pic Development Board (on the left) for this purpose. To connect both boards, students can use wires marked as 6 in Figure 1. USB Cable (marked as 5c in Figure 1) is used to program Arduino UNO and/or power it when needed.
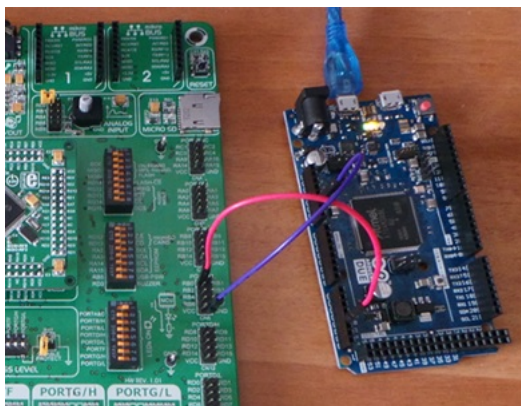
Figure 2. DAC0 pins of the Arduino UNO Development Board (on the right) connected to ADC pins of the Easy PIC Development Board (on the left)

Figure 3 demonstrates the result of classical RT-DSP Algorithm operation – filtration of 50 Hz noise by using a convolution filter. As input, as output signals are shown on the TFT Screen of the EasyPIC Development Board. Upper signal - rectangle wave with added 50 Hz sinusoidal noise created as "synthetic signal" by the code, uploaded to the Arduino DUE Development Board. Bottom signal: rectangle wave cleaned from sinusoidal noise by using a digital notch filter.

The above example demonstrates how RT-DSP assignments can be implemented without a dedicated electronic laboratory. Basically, there is no need to bring the kits to the campus. However, there are some situations when something goes wrong. This can be as software as hardware problem – for example, faulty cables. In a "normal" semester, students have an option to arrive at any available standard electronic laboratory and provide additional tests by using the equipment of a standard electronic laboratory – like oscilloscopes, signal generators, etc. Figure 4 demonstrates how a pair of students arrived with their kit at the standard electronic laboratory and validated signals by using the oscilloscope.
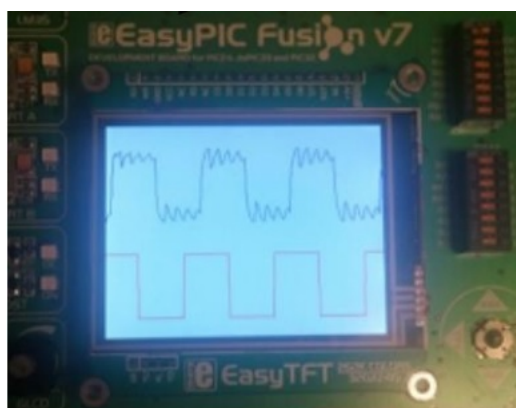
Figure 3. Example of RT-DSP operation. Upper signal: rectangle wave with added 50 Hz sinusoidal noise. Bottom signal: rectangle cleaned from sinusoidal noise by using a digital notch filter.

Figure 4. Pair of students validate signals by using equipment of a standard electronic laboratory

Logistics of RT-DSP Course in a "normal" semester

In "normal" times students of the electronic department of Braude Academic College of Engineering enrolled in the course "Real-Time Digital Signals Processing" (RT-DSP) use real hardware – dedicated development boards containing microcontrollers and additional electronic components, and dedicated software (installed to the personal computer) to program those development boards.

Specifically, as described above, pair of students get "a kit" containing "real electronic boards": "EasyPIC Fusion v7 development board" , "Arduino DUE board" (used as a software-controlled signal generator), a set of cables and wires, and USB dongle needed to use dedicated software needed to program above boards by using PC in accordance with the relevant assignment requirements.

By using the above "kit", students can practically implement (by writing a C code) at his/her home theoretical concepts (learned in the basic courses) in the frames of Home Works and Micro Projects. Figure 5 shows how exactly, by using a laptop and elements of the kit, students can arrange all needed equipment on the small table. It is the job of the students, to

show input (raw) and output (processed) signals on the graphical TFT screen of the Development Board. It can be seen that at least three USB ports are needed. Not all modern laptops have this number of USB ports. In that case, USB Hub must be used.
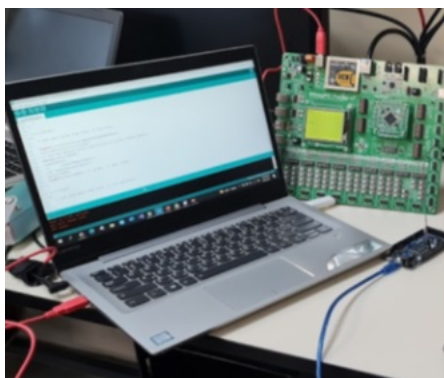
Figure 5. The exemplary layout of the laptop and two development boards on the small table at the student's home. All needed is on the table.

In the frames of the course RT-DSP, students attend 13 two-hour frontal lectures and 13 one-hour exercises. Typically the lecturer uses slides and a blackboard to explain relevant theoretical concepts and practical details of their real-time implementation. Additional materials like videos and ready-to-use project' examples can be freely downloaded from the course site. Presence in the lectures and in the exercises is not a must, but highly recommended.

To practice the theoretical concepts learned, students must execute three Home Works. In a regular semester, students are expected to create simple, but practically usable systems by using real boards and/or simulations and compile detailed PowerPoint reports on what, how, and why was done.

Additionally, students must prepare two Micro Projects. While Home Works assignments are the same for all pairs of students, Micro Project assignments differ for every pair of students – every pair must learn, implement and present in the class some RT-DSP algorithm that was not learned in detail in the lectures and exercises.

It is clear that when students work in pairs, it is very hard to understand what the impact of every student in the assignment preparations is. Ten in-class micro-works (that can be provided at any time during the lecture) may help to reward hard-working students that visit the lectures and exercises and demonstrate their understanding of the algorithms learned.

Providing RT-DSP course under COVID19 restrictions

At the beginning of the 2020 spring semester, strict COVID 19 restrictions were imposed. Lecturers of Braude Academic College of Engineering were given three days to provide alternatives to working with real electronic components. It was even impossible to prepare the kits and distribute them to the pair of students. Furthermore, even then, only one of the students in the pair would be able to work "as before". It was also clear that in case of a hardware problem, replacement of a faulty equipment would be practically impossible. After short tests, the TinkerCad simulator was selected as a proper alternative.

TinkerCad advertisement claims that: TinkerCad is a free, easy-to-use (really easy to use) web application (no need to install) that equips the next generation of designers and engineers with the foundational skills for innovation: 3D design (not used in this course) analog and digital electronics + some microcontrollers, and coding. Community of TinkerCad is about 35 million users.

It was found that the cloud-based reporting technique, developed for other electronic courses, can be used for remote reporting and grading of the student's RT-DSP assignments with minor modifications (Kosolapov, 2019, 2022). When simulation became the only possible option, students, as proof of execution, added to their report screenshots of the simulation's screens instead of adding photos of the working system. Additionally, a link to the working stimulation must be added to the first page of the PowerPoint report, so that the educator was able to check remotely all the details: how exactly students executed specific assignment. Unfortunately, the current version of TinkerCad supports only an extremely simple Arduino UNO R3 board. The small size of the RAM limits the size of data that can be processed. However, considering that Arduino UNO R3 has, as timers, as hardware interrupts, and supports direct operation with the ports (albeit using this requires a deep understanding of the microcontroller's operation), still, most RT-DSP algorithms (like ring buffers, filtration by convolution in the TD and by FFT at FD) can be implemented by using TinkerCad. Figure 5 presents an exemplary slide from the student' report, demonstrating that students have built an electronic layout containing "plain" signal generator, Arduino UNO R3 board, and "fast and dirty DAC" built from resistors and OA (it was necessary, because Arduino UNO R3 has no DAC).

Important that Tinker Cad can simulate as analog as digital electronics. Hence Arduino UNO R3 can be programmed by writing standard C code by using integrated into TinkerCad an Arduino simulator. An educator can see the code and check its execution, including graphs of the signals created by the Arduino simulator. Specifically, this example demonstrates the important DSP algorithm "normalized correlation". The goal of the students, in this case, was to implement this algorithm without RT-DSP libraries, and, evaluate the time limits of the created application.
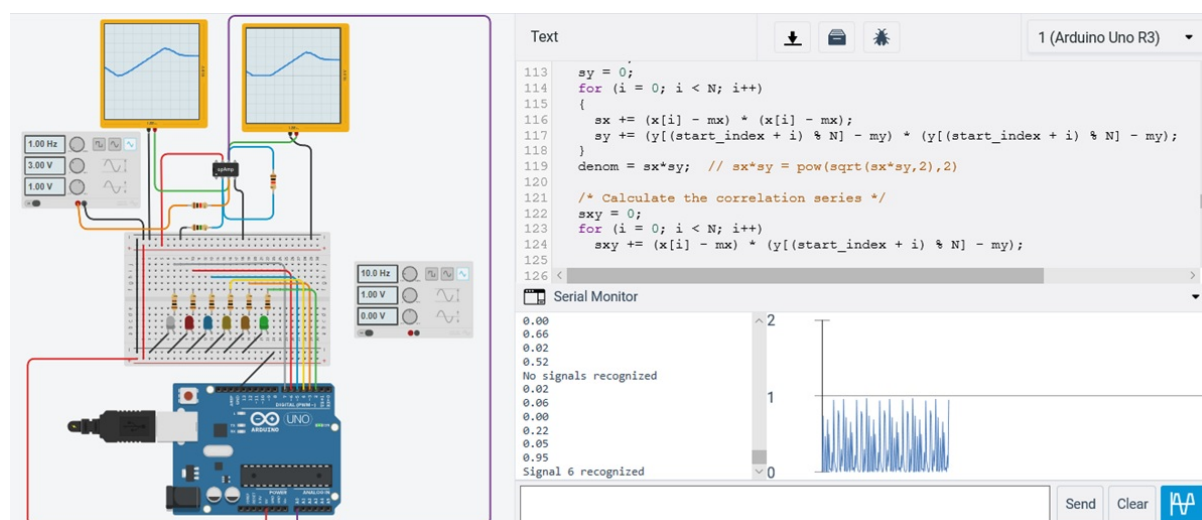
Figure 6. Example of TinkerCad simulation

Providing RT-DSP course in the Hybrid semester

It so happens that semester 2021-10 – 2022-03 was started as an online semester, but after three weeks, it became a hydride semester: lectures, exercises, and Micro Projects presentations were provided in-campus, but students had the right to stay at home and continue to use cloud services including ZOOM and Email. In the "normal" semester students were required to present in-class MicroProject #1 (which deals with different RT-DSP algorithms for different pairs of students). However, with the non-strict presence rules of the hybrid semester, a plurality of situations was created: for example, one student of the pair was physically present in class during the presentations, whereas the second student participated by using ZOOM. This situation created a number of logistics problems, and, thus, some logistics changes were needed to be done in order to ensure fair and non-biased grading, as for the students who were physically present during the lectures, exercises, and presentations, as for the students who participated remotely. In any case, in the frames of this course, each group of students prepared three Home Work reports and two Micro-Project presentations. Additionally, only students that were physically present in the class were able to participate in the short nonobligatory micro-exams.

Results and Conclusion

In "normal" times electronic students enrolled in the course "Real-Time Digital Signals Processing" (RT-DSP) use real hardware: dedicated development boards containing microcontrollers and additional electronic components, and dedicated software (installed on the personal computer) to program those development boards.

Because of COVID 19 limitations, the distribution of development boards and dedicated software to the students became problematic. Even more, technical assistance in case of installation and/or hardware problems became practically impossible. Design and testing of electronic systems is an important part of Electronic Engineer's education; hence it was decided to adapt the RT-DSP course to distant learning by using a cloud-based TinkerCad simulator. It was found that by using some tricks and simplifications, reasonably sophisticated electronic projects can be implemented. Additionally, it was found that the cloud-based TinkerCad simulator can run in parallel with the ZOOM session, while the Internet speed of the lecturer's computer is at least 50 Mbps – which means that providing frontal lectures and exercises (containing plain PowerPoint presentations and live simulations demonstrations) is feasible, at least for the groups of 30 students.

After evaluating and grading homework and micro-projects created by students in the frames of this course, it was concluded that the professional level of the designed systems is good enough to continue this course in the frames of distant learning, in case "normal" options are not available.

Unfortunately, collecting students' opinion (students' feedback) about specific courses under COVID19 restrictions become problematic, as practically, as ideologically – in the end, only a small number of students provided this feedback. Hence, this parameter cannot be used to evaluate the quality of the selected cloud approach. However, privately, after getting final grades, many students claimed that this specific course could be provided by using cloud services and by using TinkerCad simulations.

Some features of TinkerCad simulator were so good that it is planned to use the TinkerCad simulator (while it is free and cloud-based) even in "normal" semesters in parallel with "real" development boards.

References

Auer, M. E., and Gallent, W. (2000). *The "Remote Electronic Lab" as a part of the telelearning concept at the Carinthia Tech Institute*. Proceedings of the ICL2000, Villach/Austria, 28/29.09.2000.

Diya, J., Chavla, P., Chander, H., Rawat, T. (2017) *A multipurpose toolkit for teaching DSP in an undergraduate course*. Computer Applications in Engineering Education. 06 April 2017.

Hoffbeck, J. (2012). *Enhance your DSP Course with These Interesting Projects*. 2012 ASEE Annual Conference & Exposition.

Kosolapov S., and Sabag, N. (2019) *Logistics of Electronic Home Project-Based Course*. International Journal of Information and Education Technology", vol. 9 no. 6, pp. 445-448. 2019

Kosolapov S., (2022) *Time-Effective Logistics of Project-Based Course Electronic Instrumentation*. eLmL2022: The Fourteenth International Conference on Mobile, Hybrid, and On-line Learning, Proceedings, (35-41), PORTO, Portugal, July 26-30, 2022.

Nikolic, S, Vial, P., Ros, M., Stirling, D., and Ritz, C*., (2015) *Improving the Laboratory Learning Experience: A Process to Train and Manage Teaching Assistants*, IEEE Transactions on Education, vol. 58, no. 2, 2015.

Yi, Z., J. Jian-Jun, and Shao-Chun, F., (2005) *A LabVIEW-based, interactive virtual laboratory for electronic engineering education*, International Journal of engineering Education, vol. 21, no. 1, pp. 94-102, 2005.

Effectiveness of Bite-Sized Learning for Organisations: The Certis Continuing Professional Development Case Study

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The Paris Conference on Education 2022
Official Conference Proceedings

Abstract

Bite-sized learning has been touted to be the next best thing for Learning & Development professionals in large organisations. With access to digital devices and digital apps, and with adult learners becoming more savvy and less interested in long durations of courses or learning programs due to falling attention spans (Clark, et. al.), bite-sized lunch and learn programs have taken on a new focus in corporate organisations. However, there have been very little research and effectiveness testing done in organisations to measure the learning effectiveness and application through such programs. This article provides such a learning effectiveness testing for a Continual Professional Development (CPD) program, jointly organised by Certis Corporate University and Institute of Adult Learning Singapore, conducted over three lunch time sessions for close to thirty personal assistants and executive assistants from Singapore, Hong Kong and Australia in a global security technology company. Pre and post testing was conducted and results analysed along with qualitative and quantitative insights from the learners and their supervisors to determine the effectiveness and application of learning at work. Results from the study show positive data reflected, with over 40% moving from agree to strongly agree in achieving learning outcomes and over 80% qualitative responses acknowledging direct application and improvement at work. The findings from this study will be useful for corporate companies and organisations that want to design better bite-sized programs that are engaging and effective in helping their people learn at work and improve their work performance, without committing long duration of hours into training.

Keywords: Bite-Sized Learning, Lunch and Learn, Learning and Development, Adult Learning

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Introduction

Bite-sized learning (Koh, et. al. 2018) has been touted to be the next best thing for Learning & Development professionals in large organisations. With access to digital devices and digital apps, and with adult learners becoming more savvy and less interested in long durations of courses or learning programs due to falling attention spans (Clark, et. al., 2005), lunch and learn programs have taken on a new focus in corporate organisations. However, there have been very little research and effectiveness testing done in organisations to measure the learning effectiveness and application through such programs.

Personal Assistants and Executive Assistants from Singapore, Hong Kong and Australia participated in the Continual Professional Development organised by Certis Group and the Institute of Adult Learning, Singapore. The program termed, Winning Conversations, saw participants learn from a guest speaker on achieving greater success at work by supporting and making bosses job easier. The learning outcomes were delivered through three lunch time sessions of one hour each, and conducted virtually over Zoom. The focuses for each session were; session 1, Speaking to Influence, session 2, Communicating Assertively, and session 3, Saying NO. Pre and post testing was conductied on the sessional learning outcomes, and results analysed along with qualitative and quantitative insights from the learners and their supervisors to determine the effectiveness and application of learning at work.

Prior to organising the CPD and deciding on the learning content, a learning needs analysis was conducted through two virtual focus group discussions. The identified learners were asked questions, through an online poll, about their daily tasks, daily work requirements and also challenges faced, as well as desired learning needs. Majority of the responses pointed towards communication skills as a main challenge faced at work. This can be seen from the consolidated word cloud in figure 1.

Figure 1: Word cloud of challenges faced and learning needs of identified learners at work

With the learning needs analysis data, the trainer was able to co-create with the organisation leadership a more purposeful and relevant training program.

Real case studies

Research Study

This experiment aims to assess the effectiveness of the CPD programme. It aims to improve workplace performance and team learning by improving team access to bite-sized and relevant knowledge that can be immediately applied at work.

The research methodology involved two pre-design focus group discussions to understand learning needs of the identified learners, this was followed by the conduct of the pre-survey

to understand prior skill, knowledge and competency levels, after which the CPD is conducted and a post-survey conducted.

The pre and post survey questions were a self-report questionnaire specifically in four areas of communication skills; Influencing others, Psychological safety, 'Saying no', and Perspective sharing, and aimed to capture data on Bloom's Taxonomy (Bloom, et. al., 1956) and Level 1 and 2 Kirkpatrick's training evaluation measures (Kirkpatrick, 1994).

Data Analysis

This section highlights pre and post survey results on awareness and application of communication related skills at work. All sections show a large number of learners reflecting a shift from slightly agree to strongly agree as a result of the CPD learning and content.

1.   Influencing Others – saw a 30% increase in strong agreement to be able to apply this pre and post the CPD.

Figure 2: I can influence others through communication
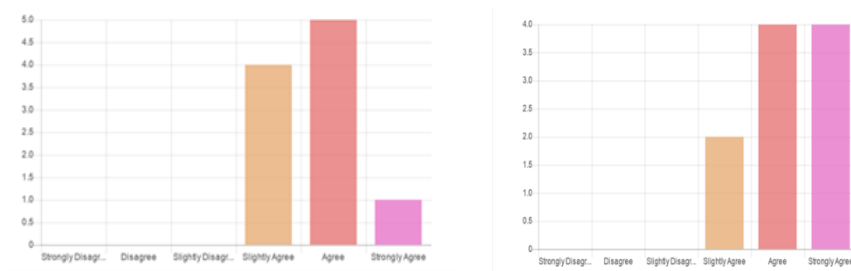
2.   Psychological Safety and Voice – saw a 40% increase in strong agreement that they are better able to share what is on their mind.

Figure 3: I say what's on my mind in a manner others are willing to consider my views
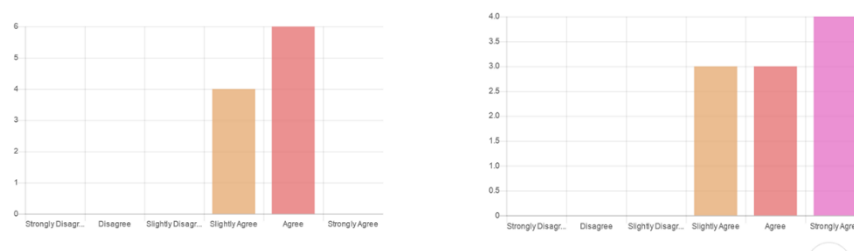
3.   Saying No – more than 40% increase in strong agreement to being able to know when and how to say no.

Figure 4: I know when it is valid to say no to others
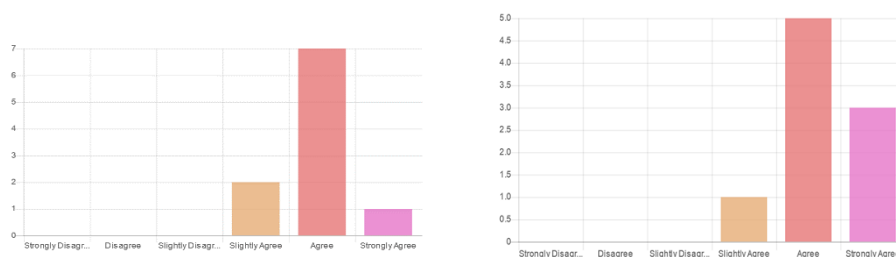
4.   Perspective Sharing – and a 23% increase in strongly agree responses to encouraging others to share their perspectives.

Figure 5: I encourage others to share their perspectives
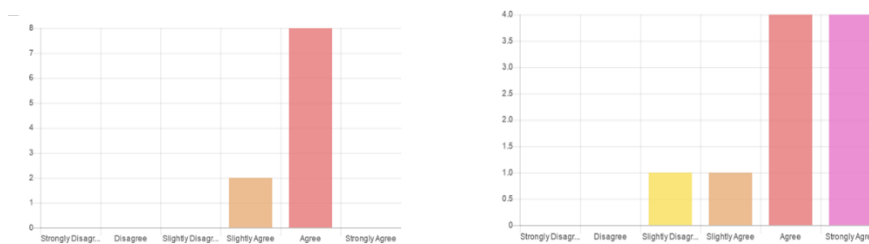
Discussion

From the data analysed, there is observable impact from the CPD programme on individual's confidence of the various communication frameworks, awareness of scenario-based applications and finally application at work to improve performance.

Overall pre and post survey results show a 40% increase in self-reported strong agreement in confidence in using the frameworks learnt through the CPD, applying them in the correct situation or better situational awareness and finally acknowledged application at work and with their supervisor.

Figure 6: Overall pre and post results

The learning aligns with the Bloom's Taxonomy (Bloom, et. al., 1956) on cognitive levels of learning, from Level 1: Remembering, Level 2: Understanding, Level 3: Applying, Level 4: Analysing. Levels 5 and 6 Evaluating and Creating are not within the scope of the study.

From the qualitative feedback, we see evidence from learners in Levels 1 to 4. With levels 1 to 3 demonstrated from learners acknowledging post of the CPD, on learning new frameworks;
R1 *"Very insightful as I learnt new ways to be more firm which will be helpful in my job."*
R2 *"I have learnt better ways to assist my supervisors and to coordinate with my peers through the frameworks."*
And also for Level 4: Application at work;
R1 *"Practical techniques that we can use in our course of work."*
R2 *"It's enlightening to come together to learn different approaches of communication and how we can apply it at our workplace."*

Conclusion

From this program study, quantitative and qualitative research and implementation, results show positive data reflected, with over 40% moving from 'slightly/agree' to 'strongly agree' in achieving learning outcomes and over 80% qualitative responses acknowledging direct application and improvement at work. There is also observable impact from the Bloom's taxonomy perspective, from understanding, to applying learning at work.

In conclusion, the CPD programme has achieved it's intended objectives and the study shows positive results in learning new skills, frameworks and knowledge as well as positive application at work and even enhanced confidence in work tasks and performance after the implementation of this programme. This reinforces the andragogy of using bite-sized learning approaches for busy professionals and adult learners, who require just-in-time learning so they can immediately apply at work. This reinforced the interest and effectiveness of keeping these professional learners engaged in small groups and over shorter durations as compared to one to two day workshops that will take the employee entirely away from work.

The findings from this study will be useful for corporate companies and organisations that want to design better bite-sized programs that are engaging and effective in helping their people learn at work and improve their work performance, without committing long duration of hours into training.

References

Bloom, B.S., Engelhart, M.D., Furst, E.J., Hilland, W.H., & Krathwohl, D.R. (1956). Taxonomy of educational objectives, Handbook I: Cognitive Domain, New York: David McKay, vol. 19, pp. 56.

Clark, R. C., Nguyen, F., & Sweller, J. (2005). Efficiency in learning: Evidence based guidelines to manage cognitive load. Pfeiffer.

Koh, Noi Sian; Gottipati, Swapna; and Shankararaman, Venky. Effectiveness of bite-sized lecture on student learning outcomes. (2018). 4th International Conference on Higher Education Advances (HEAd'18), Valencia, Spain, 2018 June 20-22: Proceedings. 515-523. Research Collection School of Information Systems.

Kirkpatrick, D. L. (1994). Evaluating training programs: the four levels. San Francisco: Berrett-Koehler.

Understanding Pain by Working It Out:
Teaching Literature Interactively to Build Resilience

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Abstract

Young people have to face a range of different kinds of stress in their journey of physical and emotional growth. Before the pandemic, educators and other stakeholders have already put in place a lot of measures in the educational experience to help young people understand and face these challenges. As the global world has been struggling with the challenges posed by covid-19 in the past two years and many "normal" practices have to make way or change their mode of operation, we are even more aware of the substantial stress that young people are facing. In many ways, the content and proposal of this presentation is not new, but in view of the sharpened challenges young people are facing, and also the very changed mode of communication used in education, the presenter would like to propose something more specifically relevant to our time and our way of life. Literature, often seen as an elite subject for those who have the gift (at least in a place such as Hong Kong), can be taught in an interactive, and "practical" way to be the tool for understanding our emotional responses to the external environment. Moreover, by learning it in an interactive way, learners can find mutual support among themselves during the process. This presentation is a sharing of some examples of how world literature/culture can be taught in an interactive way at the undergraduate level to facilitate emotional and self-understanding by the learners through carefully designed in-class and post-class activities.

Keywords: Interactive Classroom, Literature, Cultural Texts, Emotional Wellbeing, Online-Learning, Connection And Isolation

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Introduction

When the proposal for this paper presentation was written, the global world was still very much in the grip of the covid-19 pandemic. In Hong Kong where I work and live, the new wave of omicron strain outbreak happened soon after the Lunar New Year, and caused unprecedented cases of infection and death. Two years after the first appearance of covid-19, my home city saw increasing disruption of daily routines including closing of public venues, limited public and social services, restriction of opening hours in restaurants, and most relevant to our discussion here, the suspension of face-to-face teaching once again, the fourth time in three years.[1] Although the exact type and length of precautionary measures adapted in different countries are different, there is a general concern that teaching and learning have been adversely affected during these few years, and learners across the world have suffered in various ways as a result.

Discussion in relation to this disruption of teaching and learning has also moved together with the development of the pandemic situation across the world. During the initial stage of the pandemic, the urgent need was to find a way of continuing the teaching and learning without face-to-face contact. Time was thus spent on adjusting to the online mode of delivery – not just to ensure that the syllabus was covered, but also that the teaching and learning processes took place sufficiently as compared to the face-to-face mode. When various online meeting softwares were available and users in the education sector had generally mastered this mode of delivery, attention was drawn to other aspects of the learning experience. Depending on the actual conditions of different countries, moving the formal component of education online did not replace the entire educational experience for learners across age groups. In fact, even within the academic profession, many would agree that having online conferences is not quite the same as having face-to-face conferences, for discussion and for knowledge exchange.

In Hong Kong, while learners in the primary and secondary schools still manage to cover the curriculum and public examinations were still conducted as planned, parents and teachers alike noted a difference, which may be described as an "incompleteness" of the educational experience for the learners. While the academic aspect of the teaching and learning is taking place via the online platform (many would argue that even this aspect is discounted without face-to-face interaction), the non-academic learning, usually taking place during the co-curricular activities, and also among learners during their collaboration in in-class activities or even during recess and lunch-breaks, is missing during the online classes. In higher education, although students are more mature and have more independence in how they organize their own learning, the reduction of face-to-face interaction has resulted in reduced connection among peers, and in turn brought about a heightened sense of isolation and loneliness.

University education is an important phase of personal growth not (only) because these few years of learning will directly or indirectly put a young person in a certain profession (or pave

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[1] The Hong Kong government announced the advanced summer holiday to primary and secondary schools at the beginning of March 2022. This meant that schools had to stop all teaching and learning activities from mid-March until the end of the original Easter Holiday in late April, and re-open to allow half-day schooling then. Schools which had achieved a good rate of vaccination among pupils would be allowed to have full-day teaching and extra-curricular activities. This "advanced" summer holiday meant that the summer school term will extend into late July or early August, to give a relatively short summer holiday for school pupils in August 2022.

a way for further academic and professional development). More importantly this is the threshold of adulthood – students in Hong Kong typically enter university at the age of 18 and graduate at 22 – when young people learn to establish their place in the world. This is the time when they officially emerge from parental guidance and take over their own responsibilities: what kind of person to be, what talents to develop, how they want to interact with other people and the world, and what kind of life they prepare for themselves. University education, or experience in the university, should offer help to young people in these daunting tasks during this transitional (and hopefully transformative) period before they enter society fully as a working adult.

Even under the most "normal" conditions, the university experience for young people is full of challenges as they come to learn about themselves and try their best to connect and work with other individuals in this expanded world while they are equipping themselves professionally at the same time. Frustrations from human relationships is a constant challenge for young people during this phase of their lives, even without the added impact of communication disruptions by the pandemic. In response to the pandemic reality, and the increased sense of isolation and loneliness felt by university students, I would like to suggest an approach of teaching and learning in the area of literary studies (which is my academic background) that could make young people relate to the subject in a more practical and relevant mindset. In other words, I hope to present the literary and cultural texts not only as disciplinary materials, but also as "case studies" where findings will directly benefit us in our everyday life.

The following is a few selected examples of literary and cultural texts which I have used in my teaching to discuss not only literary features but also issues that are important to young people in their journey of self-understanding, emotions management, and learning of interpersonal relationships. The emphasis here is not the value of these pieces in the formal curriculum, but rather how they can be used to create a learning experience that inspires students to ask and (hopefully try to) answer questions about themselves as individuals in the world. These examples are drawn from different courses that I taught in the university setting in Hong Kong over the past years; I suggest that an interactive lesson design can facilitate a mutually beneficial learning experience for the instructor and the learners, which addresses a need that is always present in university education, but more acutely felt during these past years of pandemic situation.

To Create is Human: "The Great Automatic Grammatizator" in the Age of AI

"The Great Automatic Grammatizator" is the titular story of Roald Dahl's 1954 short story collection. The main character Knipe is a computer genius, and creates a calculating machine which earns a lot of money for his boss, Mr. Bohlen. During his well-earned holiday, Knipe creates a writing machine which has the capacity to generate short stories from pre-loaded data. After his holiday, he proudly presents this writing machine to his boss, claiming that they can turn it into good business by sending the stories generated from the machine to various literary magazines which pay handsomely. When the originally skeptical Mr. Bohlen sees that creative fiction is really good business, he demands something more substantial from Knipe, and wants him to enhance the machine so that it can generate huge volumes of fiction which he feels are more important than short stories. Knipe follows his instructions and comes up with the Great Automatic Grammatizator which can tailor-make novels based on the huge database pre-loaded.

With the success of this second phase of the machine, Knipe constructs an even more sophisticated business plan. He starts an agency and goes around offering book contracts to current writers, not to publish their works but to borrow their names to be listed as the authors of works generated from the writing machine. In return these writers agree not to write and only collect earnings from these publications with their names on the cover page. Ironically this business plan is extremely successful and the agency has bought up a large portion of market share. At the end of the story, readers see an unnamed writer painfully trying to decide whether to sign such a contract while starving children are "howling" in the next room. The story ends with a prayer by the unnamed writer, but no answer as to whether the "golden contract that lies over on the other side of the desk" (Dahl, 1954) is accepted or not.

This story was taught in a course entitled "Language and the Humanities"[2] and I chose this short story to illustrate some of the roles of language in the human world. Although the story was written at a time when the computer was not a common personal device, the narrative has posted serious questions concerning AI, in the form of the writing machine that is being used to replace human beings in one of their most valuable assets – creativity that cater to human needs. I feel that this simple story has a lot to offer to young university students who are beginning to find their own position in the world, who may still be doubtful about themselves, and who are still uncertain about their future path – as human beings and as professionals. The text was placed in the eLearning platform at the beginning of the semester, and to make sure that they read before they came to the lecture, I announced a short quiz for the lecture.

After giving the students the responsibility of reading and knowing the facts of the story, I used the lecture to conduct a number of in-class activities in relation to the text. One of the most successful in-class activities of this story is asking the students to role play the negotiation of the contract between Knipe (the agency) and the individual writers. I asked the students to get into groups of 5 or 6 (usually there were around 45 students in this course) and the groups would either play the role of the agency or the individual writers. The agency would need to draft a contract which could entice the writer to give up writing and let it use the name for publications generated by the machine; while the writer would need to decide what terms are acceptable and what not. After 20 minutes of discussion, I would pair up a writer-group with an agency-group and see how they negotiate based on the draft contract. The class would witness the negotiations.

It did not matter whether the negotiation of the contracts was successful or not. It did not even matter whether the terms they came up with were reasonable or not. The entire setting was fictional, and the purpose was not to learn how to set up a contract legally. It was the content and essence of humanity – creativity in particular - that was the heart of the reflection. The course was a required core in the Humanities Programme, and to reflect on what makes us human, what our needs are, how we communicate as well as fulfil those needs, and finally the price we are ready to pay in order to safeguard what we believe in are the main objects of my in-class activities. In the process of group discussion, students got to hear what fellow classmates had to say about the role they were assigned; and in the negotiations with the partner-group they had the opportunity to listen to other human beings

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[2] This is a core course of the undergraduate programme BA in Humanities at the Hong Kong Baptist University. While there are a number of course intended learning outcomes, the content of the course will differ every time when it is offered, depending on the instructor.

arguing from a different position about these values. From the several attempts I made with this story, the learning process was both fun and thought-provoking.

To Live for Oneself: "Story of an Hour" and the Age of Gender Equality

"Story of an Hour" is a famous short story by American author Kate Chopin, published in 1894. It is a short narrative talking about the hour-long experience of the main character, a young wife called Louise Mallard. At the beginning of the story, readers are told that Louise suffers from heart trouble, therefore her friend is very careful in breaking to her the bad news of her husband's death in a railroad accident. Hearing the news, Louise surrenders herself to great grief, and soon retires to her own room upstairs. There, in the quiet and intimate personal space, her attention is drawn to the outside world she sees through her window. Visions of life, energy and enjoyment are evident everywhere, and this wakes up something which has been deeply and painfully repressed in her heart. The sounds of new life draw from her the deep yearning for freedom which has not been possible all this time.

While this emotional struggle is going on inside Louise, her sister Josephine becomes increasingly worried about her quietness and starts banging on the door. Fearing that Louise will do something to harm herself when grieving for her husband, Josephine urges her to open the door and show herself. Now Louise has accepted the yearning for freedom that has been buried inside, and she walks out of the room a new person, looking like the goddess of Victory, who is sure of herself and who looks forward to a new life dedicated to herself and herself only. Although she does not know the reasons for the change, Josephine welcomes her newly affirmed sister, and the two young women walk down the stairs to join Richards, the friend who brings the news. At this happy moment, someone opens the door and Brently Mallard, the supposedly dead husband, walks in. Richards tries to block Louise's view but he is too late. At the end of the story, readers have a comment from the doctors that it is "the joy that kills" the weak-hearted Louise.

I have taught this story in numerous occasions, including an introductory course on feminist literary studies, and as introduction to humanities in undergraduate programmes. I have also used this story in a class of gifted secondary students (aged around 15) as an introduction to literature, and more recently in a sharing session with university students as a co-curricular activity during the covid-19 pandemic. In all these occasions, the focus of the lesson is the emotional drama that Louise Mallard experiences in the course of that one hour – when she believes that her husband, the cornerstone of her life, is gone, and her future days will be days on her own. Louise's experience is a wonderful depiction of the tension between social expectations on a person's behavior and one's true feelings and wishes for life. The doctors' comment at the end of the story, describing Louise's cause of death as joy, is particularly ironic and enlightening, in view of this underlying tension.

As the story is relatively short, asking students to read the story in class is not a problem. In fact, it is quite a nice experience to watch the students as they follow Louise's emotional change when they move through the story. After making sure that they all agree on the basic facts of the story, a short role play of the two sisters is an interesting activity for students to feel how one's behavior is often influenced by social expectations and moreover how one's values are shaped by those of the establishment. Another in-class activity, which students can do individually, is to write diary entries for Louise. In this most personal and intimate space, Louise can speak frankly about her feelings of marriage, of always listening to her husband, and of being perceived as the fragile and delicate female who always needs protection.

Finally, I also asked my students to give Brently a voice by role playing a conversation/interview between Richards and him, after the death of his wife. This may extend the interest of the story so that we can imagine the feelings of the husband in a patriarchal society.

The irony of having the wife shocked to death at the end of the story when it starts with news of the husband's death is not lost to my students. The role play between the two sisters proves to be effective for students to realise how the two different positions may result in two very different feelings towards the same piece of news. To related parties, the death of the husband is tragic in the sense that the wife will have no one to rely on, and will be helpless in facing her future. For the student stepping into the shoes of Louise, it will simply be a matter of finding a way to support herself from now on. It is not difficult for young female university students today to come to such realization, but it is certainly an enlightenment for them to try to view the situation from a female perspective more than 100 years ago. The final comment from doctors strengthens students' understanding of the possible gap between social expectations and one's true feelings and experience.

Loneliness and Connection: *The Red Balloon* and a Global Community

The Red Balloon is a short film (34 mins.) directed by French film-maker Albert Lamorisse in 1956. The "story" revolves around a nameless young boy (aged 5 or 6) who one day rescues a red balloon from a lamp-post. The red balloon proves to be animate and follows the boy around the Parisian streets. The boy is happy to have acquired this new companion, and takes the balloon with him wherever he goes, and communicates with it as if it is a pet/an animal that has understanding. The film spends a large part of its time showing us the interaction between the boy and the balloon – on the street, in school, on the tram, and even at home when the boy simply "hides" the balloon outside the bedroom window. Towards the end of the film, a gang of street urchins spot the boy and his balloon, and close in to them on top of a hill. The poor balloon is deflated, to the boy's great sadness. Miraculously at this moment, as if heeding the call of the dying balloon, all colours of balloons fly from across the city to come and "join hands" to lift the boy up to the sky.

I have talked about this film with students in different occasions, including an introductory film culture course, and a recent informal sharing with students – a kind of outside discipline learning activities during the covid-19 pandemic. The film text is very user-friendly because it is relatively short, and there is not much dialogue. Although it is a French film, one does not need to know French to understand the film – the actions are simple and clear, although the feelings are authentic and appeals to most audience. The greyness of the post-war Parisian streets sets off a great contrast with the rich redness of the balloon, as well as the rainbow colours of the multitude of balloons in the final moments of the film. The loneliness and isolation felt by the boy before he meets the balloon, as well as his joy in the companionship with the red balloon is clearly visible and audible in the colour and the music.

In my experience sharing this film with the students, "sharing" indeed plays an important part. As the film is a very simple narrative about the lonely boy's encounter with the red balloon, and their experience together, living this experience of loneliness and friendship together with other audience (in this case my students) is essential for our discussion. Hearing my students' laughter when the balloon tricks the boy, and their shocked grief when the balloon slowly creases up and is left on the ground is a fundamental part of our journey of emotional understanding together. Sharing the same physical space in the room when we

witness the boy's adventure gives us the chance to come face to face with our own vulnerability to loneliness and our need for connection with other people. Also at the end of the film, the final miraculous appearance of the colour balloons gives us hope that somewhere and somehow our needs will be fulfilled in the most wonderful way. This "ritual" of companionship with my students is already the best path into the understanding of the film.

Another in-class activity that has proved useful for students to reflect more about our emotional needs and how to achieve well-being is a simulated conversation between the boy and the balloon. It is interesting in the film that the boy is not the only person who seeks/needs the companionship of a balloon; they encounter a girl on the street with a vividly blue balloon, and there is an exchange of mutual understanding between them. In the students' imagined conversation with the balloon, they get the chance to identify their own emotional needs, and to be brave enough to reach out to build a connection with another. This in-class exercise allows students to search inside themselves and share what they find in a relatively safe and companionable setting. In many ways, this is almost a therapeutic session for all concerned as no one is beyond the human condition, and the communication via the film is inclusive given the dearth of dialogues.

We Are in It Together: Understanding Pain through Interactive Exercises

In the above examples, the teaching of literary and cultural texts has been done in such a way to involve all students in class, in the reading/viewing of the texts, then followed by extended discussions that draw on the texts as examples of human experience. This interactive teaching approach makes the students pay more attention, as they have to get involved in the discussion one way or another, and helps also to draw the personal into the learning experience. Although the above teaching and learning experiences come from a range of university classes, and some of them during the face to face mode, I believe that this approach of teaching can be and should be adopted in whichever mode of teaching being conducted. The main benefits of this teaching and learning experience go beyond the disciplinary knowledge related to the texts, and reach out to the intimate centres of the young people sitting in the classroom (or on the other side of the zoom screen).

As mentioned in the beginning of this paper, what is being proposed here is not something entirely new. The learning and teaching of literature and cultural texts within their disciplines should certainly continue. What I am suggesting is only to further engage the university learners by inviting their understanding of the characters through reflecting on their own experiences and finding commonalities and differences. Through this kind of sharing, the literary and cultural texts become a kind of "case studies" of human emotional experience/pain, where students can refer to as precedents, and shed some light on their own experience. This creates a chance for understanding the emotional experiences (very often pain) and opens a way to address these problems.

While it is an effective learning and teaching approach during "normal" times, the presentation suggests that it is even more important to adopt this kind of approach during unusual times such as the world situation in the pandemic. Besides the disruption to normal economic and social activities, the pandemic has also created a lot of barriers to different kinds of communication, resulting in loneliness and isolation, both physically and emotionally. While the world has been trying to continue educational activities online, teaching literature and cultural texts in an interactive way (given the restrictions of online

communication) is perhaps an effective tool not only in the pursuit of subject knowledge, but also in enhancing mental and emotional health, as well as promoting a kind of moral education in a multi-disciplinary context.

References

Chopin, K. (1894). *Story of an Hour.* Retrieved from Virginia Commonwealth University: https://archive.vcu.edu/english/engweb/webtexts/hour/

Dahl, R. (1954). The Great Automatic Grammatizator. In R. Dahl, *The Great Automatic Grammatizator and other stories.*

Lamorisse, A. (Director). (1956). *The Red Balloon* [Motion Picture].

Nies, T. (2017, September 12). The Story of an Hour. Retrieved from https://www.youtube.com/watch?v=ofAiwejmMqo

Shmoop. (2013, May 24). The Story of an Hour by Shmoop. Retrieved from https://www.youtube.com/watch?v=TDystyoO_0Y

Spizzirri, A. (2014, November 27). The Great Automatic Grammatizator. Retrieved from https://www.youtube.com/watch?v=6yt3ghIsaEc

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Resilient Modelling for Sustainability Communication:
Developing an Adaptive Organization Sustainability Communication Model (OSCM)

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Abstract

This paper reports on the development of a theoretical model for understanding corporate communication about sustainability issues to address the identified need for such a model (Bittner-Fesseler & Weicht, 2020) and to enable organizations, including those in higher education (Katiliute et. al., 2014), "to understand the possibilities and conditions of communication processes about sustainability and its underlying concepts, to recognize its deficits and to analyze and develop it conceptually" (Godmann & Michelsen, 2011, p. 9). A literature review was conducted on different definitions and perspectives of sustainability communication, corporate / organization sustainability communication, and integrated sustainability communication to identify elements that could constitute the components of an Organization Sustainability Communication Model (OSCM) (after Ki & Shin, 2015). Developing McDonagh's (1998) early work on a model for sustainability communication a simple OCSM building process was then devised for collecting, comparing, associating, and categorizing data into components with essential elements identified to constitute an Organization Sustainability Communication Model. Seven components were identified and used to produce the model that is represented diagrammatically with a detailed commentary on its use to identify the best approach for the organization's sustainability communication. The paper concludes that to successfully implement and practise OSCM, further necessary investigations should include, among others, testing of OSCM in organizations in different countries, principles for resolving conflicts arising from different interests in sustainability, variables such as industry type and firm size, and the abilities and traits needed by organization communicators to provide effective sustainability communication.

Keywords: Communication, Sustainability, Corporate/Organization Sustainability, Communication, Organization Sustainability Communication Model

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Introduction

Communication is central to all human societies because of its relevance in shaping world perception (Nicotera & Putnam, 2009). Sustainability communication is "a relative new concept "(AdomBent & Godemann, 2011, p. 27). It is "a path responsible for facilitating … mutual understanding" in sustainability (Leitzke & Marchiort, 2016, p. 110). In this context, it provides a possible way for different subjects, for example organizations and people, to interact. Corporate communication is involved in almost all activities of different businesses, and "usually granted only a supportive, rarely a strategic role" (Bittner-Fesseler & Weicht, 2020, p. 93). With the growing significance of sustainability, corporate sustainability communication is given a key role in organizations / corporations (AdomBent & Godemann, 2011).

Ki & Shin (2015) suggest replacing the term Corporate Sustainability Communication (CSC) with Organization Sustainability Communication (henceforth OSC) because it covers all kinds of organization. Given the complexity of sustainability, Siano et al. (2013) and others (Bittner-Fesseler & Weicht, 2020; Newig et. al., 2013; Inia & Serban, 2013) argue that if OSC does not follow the ideas and principles of sustainability, and is not designed sustainably, its credibility will be weakened or even lost. Nevertheless, research "is mostly limited to sustainability communication without presenting a model of sustainability communication" (Bittner-Fesseler & Weicht, 2020, p. 93). A theoretical model for OSC is necessary for another significant reason. A model can enable an understanding of "the possibilities and conditions of communication processes about sustainability and its underlying concepts, to recognize its deficits and to analyze and develop it conceptually" (Godmann & Michelen, 2011, p. 9). A model is "a simplification of the complex reality" (Osterwalder, 2004, p. 25).

In consideration of all these views, this paper attempts to develop a model of OSC by reviewing relevant literature on sustainability communication, organization / corporate sustainability communication, and integrated corporate sustainability communication.

An Organization Sustainability Communication (OSC) Model Building Process (MBP)

To identify elements that could constitute the components of an OSC model, a literature review was conducted on different definitions of and perspectives on OSC / CSC, sustainability communication and integrated sustainability communication. A simple OSC model building process (Figure 1) was developed from the methodologies proposed by Christensen & Carlile (2009) and others (Aranha et. al., 2017; Cosenz et. al., 2020; Da Silva, 2020; Jabareen, 2009; Nicotera & Putnam, 2009; Osterwalder, 2004; Sanchez-Planelles et al., 2021; Taran et al., 2015) for use in this paper to serve as a filter to identify the most rigorous elements for building an OSC model.

Fig 1 MBP (Model Building Process)
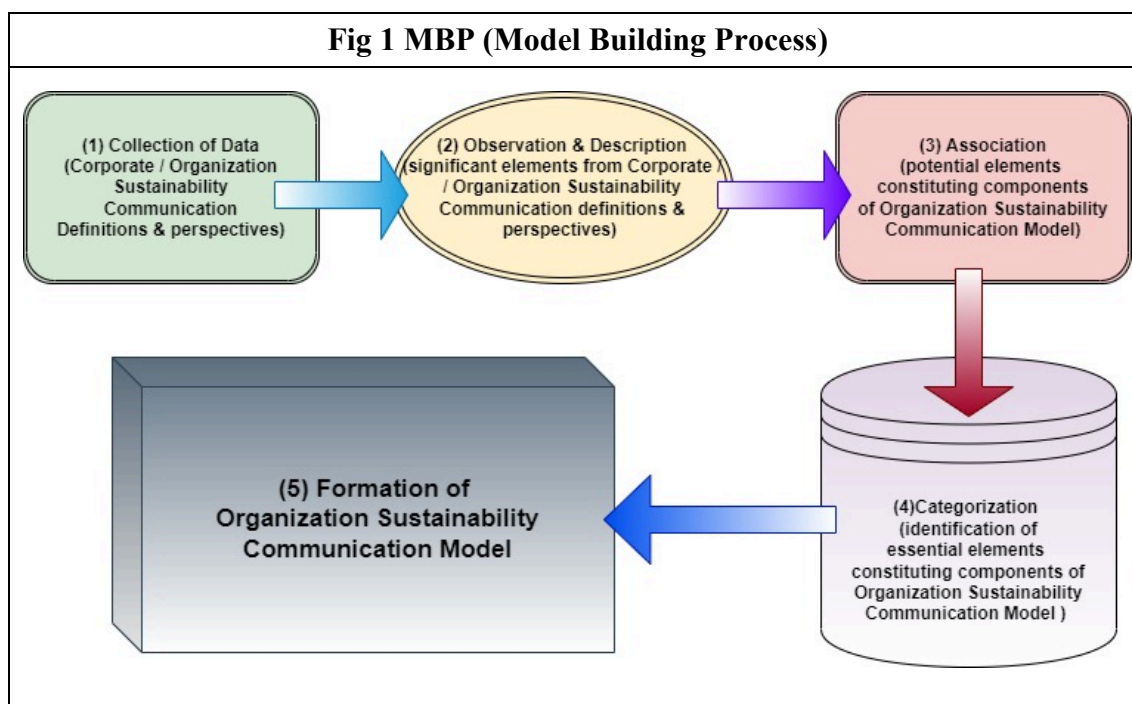
Literature Review

Corporate Sustainability Communication (CSC)

Corporate sustainability is "a relative concept that describes the planned and strategic management processes of working towards a balance of economic, social, and environmental goals and values" (Signitzer & Prexl, 2008, p. 3). Sustainability communication is "strategically important for achieving sustainability goals" (Bittner-Fesseler & Weicht, 2020, p. 96). Signitzer & Prexl (2008) define Corporate Sustainability Communication (CSC) as "an evolving concept that refers to corporate communication about sustainability issues" (p. 2). It includes aspects of social justice and environmental and ecological awareness in relation to economic success, corporate sustainability goals, effects and conflicts of sustainability management, Corporate Social Responsibility (CSR), sustainability of products and production processes, and stakeholder behavior (Signitzer & Prexl, 2008; Rasche et al., 2017; van Marrewijk & Werre, 2003; Wilson, 2003).

The important role of CSC is "to enable … to develop the competences to adequately interpret the often contradictory and confusing scientific, technological and economic information … be able to react and cope with the resulting long-term and complex societal changes" (AdomBent & Godeman, 2011, p. 27). CSC plays two roles: "… on the one hand, companies inform about their sustainability performance, and on the other … geared towards supporting a company's sustainability efforts" (Bittner-Fesseler & Weicht, p. 96).

In his study, Brugger (2010) identified the following criteria essential for a model of CSC: "dialogue orientation; target audience orientation; the ability to integrate and to ensure a holistic representation of the three sustainability dimensions as well as integrated communication measures" (pp. 238-239). The three sustainability dimensions refer to the economic, ecological – environmental, and equity – social dimensions (Elkington, 1998).

Organization Sustainability Communication (OSC)

Signitzer & Prexl (2008) have called for attention on OSC by appealing for "organization's legitimation within society … (and) …primary concern of … organization's inclusiveness … looking at an organization from a societal view"
(p. 9).

Ki & Shin (2015) have suggested using the term organization sustainability communication (OSC) instead of corporate sustainability communication for one reason. The term corporate is commonly used to refer to a profit-oriented organization. Ki & Shin (2015) argue that the term organization refers to all types of organization, including profit, non-profit, international, and governmental organizations, etc. Every type of organization is entitled to communicate its sustainability practices and policies (Babiak & Trendafilova, 2011). The term 'organization' is more inclusive and suitable (Ki & Shin, 2015). For this reason, the term Organization Sustainability Communication (OSC) is used here.

With a modification of the definition by Signitzer & Prexl (2008), Ki & Shin (2015) define OSC as "an organization's voluntary, planned and strategic communication efforts for working towards a balance of economic, social and environmental goals and values to achieve the long-term goals of an organization and its stakeholders"
(p. 37).

Sustainability and Communication

"The vision of sustainability is related to concepts of modernization and development of society that entail a stronger engagement of individuals" (Godemann & Michelsen, 2011,p. 5). Communication "can be understood as a social process in which common orientations are interchanged' (ibid, p. 5). In this context, participation is relatively important for sustainability communication (Godemann & Michelsen, 2011; Newig et al., 2013).

Communication is important for sustainability in organizations (Allen, 2016) as it is through communication that "the interior is exteriorized" so that we can inform one another (Ziemann, 2007, p. 124). When there is a lack of communication in an organization, it would be difficult to implement any changes and make the organization more sustainable (Genc, 2017). "Communication, therefore, becomes a necessary component of sustainability" (Bittner-Fesseler & Weicht, 2020, p. 94).

Communication is a "mediated action with humans constructing their reality on the basis of their perceptions and experience" (Godemann & Michelsen, 2011, p. 6), and "views are exchanged" (ibid., p. 5), allowing for social construction of reality for a compromising understanding (Berger & Luckmann, 1966). Human behavior, social values and attitudes towards the world and environment are mediated by communication (Godemann & Michelsen, 2011).

Sustainability issues are characterized by a high complexity and uncertainty (Newig et al., 2013). Given these challenges, communication plays a crucial role in any sustainability strategy (Genc, 2017; Newig et al., 2013).

Sustainability goals of different stakeholders maybe "ambivalent in terms of involving conflict of interests and conflict of values" (Genc, 2017, p. 514). In view of this, the task of

communication becomes essentially important in enabling a common understanding about social values on sustainability with a compromise following ro resolve the different conflicts (Brand, 2011; Genc, 2017; Newig et al., 2013).

Godemann & Michelsen (2011) define Sustainability Communication (SC) as a "process of mutual understanding dealing with the future development of society at the core of which is a vision of sustainability" (p. 6). It is a "persuasive instrument" (Godemann & Michelsen, 2011, p. 11) and can enable "an interactive exchange of information" (Hoffstaedter, 2020, p. 10).

The process of understanding occurs on different levels and in different contexts: between individuals, between individuals and institutions, between institutions and within institutions, in schools and universities, in the media, in politics, in business, in communities and at regional, national and international levels (Godemann & Michelsen, 2011).

The significance of communication to sustainability lies in bringing a close relationship between human beings and their environment into a social discourse, developing an awareness of the problems (if there are any) about this relationship. Where the relationship between human beings and their environment creates problems, then a compromise between these problems and social values and norms is required (Godemann & Chelselsen, 2011; Leitzke & Marchiori, 2016; Newig et al., 2013; Pezet & Casalegno, 2017).

Rationale for Sustainability Communication

In their study, Newig et al., (2008) identified 3 rationales (Table 1 RSC) for resolving the complexity and uncertainty in sustainability communication.

Rationales for Sustainability Communication (RSC)	
(1)	Increased communication, dialogue and involvement of stakeholders are essential to broaden the information and societal values and compromise different conflicting views to reach an agreement (Funtowicz & Ravetz, 1993).
(2)	As sustainability goals are typically ambivalent (Godemann & Michelsen, 2011), pursuit of a common understanding about societal value(s) and goals on sustainability through participation, collaboration and compromising (Weidner, 2004) is necessary in sustainability communication.
(3)	There is a high dispersion of views among different internal and external stakeholders. Coordination that can enable effective arguing, bargaining and social learning about sustainability is required in realization of sustainability goal(s) (Newig et al., 2008, 2013).
Table 1 RSC	

Communication contributes to strengthen, relativise and compromise the various conflicting perspectives and complexities of sustainability (Godemann & Micehelsen, 2011; Leitzke & Marchiori, 2016; Newig et al., 2013; Signitzer & Prexl, 2008). Where there is no communication about, of and for sustainability, sustainability 'does not have any effect on society' (Berger & Luckmann, 1966, p. 63).

In their studies, Genc (2017) and Newig et al. (2013) proposed the adoption of the typologies of Communication about Sustainability (CaS), Communication of Sustainability (CoS) and Communication of Sustainability (CfS) to understand and approach the execution of sustainability communication.

Communication about Sustainability (CaS)

Communication about sustainability (CaS) refers to "the processes in which information, interpretation, and opinions about sustainability issues are exchanged, discussed and debated" (Newig et al., 2013, p. 2978). In these processes, sustainability issues can be transformed and framed in horizontal communication, from face-to-face interaction to the mediated level of mass communication (Neidhardt, 1993).

CaS incorporates the senders' perception of sustainability issues to be delivered to the receivers. It serves an important function of establishing a mutual understanding between the senders and receivers of CaS by framing and structuring concerns, facts, arguments and claims at stake to the receivers. CaS informs the receivers of "the goals which are required to be accomplished, and of who should take action" (Genc, 2017, p. 515) through engagement of sustainability issues awareness and creation of "a common understanding of the issue at stake" (Newig et al., 2013, p. 2978), and "construction of reality" (Brand, 2011, p. 57) and a coalition and / or a compromising of different discourses and perspectives (Hajer, 1995).

The effectiveness of CaS can be indicated by the amount of attention received from the mass media and the receivers (Bonfadelli, 2010; Newig, 2011). Another indicator is the determination of those who have access to the discourse(s) and influence the CaS framing process(es) (Weiggart et. al., 2000).

Communication of Sustainability (CoS)

Different from CaS, communication of sustainability (CoS) is instrumental (Genc, 2017; Newig et al., 2013). The flow of communication of CoS is mono-directional and sender – receiver oriented. The sender follows a particular objective of communication (Newig, 2011). The specific functions of CoS are informing and educating people and achieving social engagement (Moser, 2010). In this consideration, it is argued that CoS 'has clear intentions about its desired effects ... assessed in terms of its effectiveness' (Newig et al., 2013, p. 2979), Such effectiveness is addressed by asking 3 questions. (i) Have the recipients (of message) been reached? (ii) Have they understood the message? (iii) After receiving the message, have they changed their values and behavior? (Newig et al., 2013).

However, this mode of informing and educating ordinary people by experts is criticized (Leake & Hasting, 2010; Nerlich et al., 2010). The dominant experts' quest for effecting change at the individual level, which has only had very limited success, is questioned in favor of dialogue and discourse (Barth, 2012; Adom*B*ent & Godemann, 2011). Dialogue and discourse both take a significant role in McDonagh's (1998) model of sustainable aaa

discourse both take a significant role in McDonagh's (1998) model of sustainable communication (See Table 2 & Fig 2 PSC).

Communication for Sustainability (CfS)

The concept of CfS emphasizes the normative aspect of sustainable development (Barth, 2012; Genc, 2017; Newig et al., 2013). CfS provides information about sustainability and raises awareness for sustainability consideration. The objective of CfS is "to facilitate societal transformation towards the normative goals of sustainable development" (Newig et al., 2013, p. 2980).

Though the boundaries between CaS, CoS and CfS are "somewhat blurred" (Newig, 2013, p. 2980), they can be considered as "useful analytical tools when considering the various communication processes" (Genc, 2017, p. 516).

Model for Sustainable Communication (SC)

In his study, McDonagh (1998) developed "a model for sustainable communication (SC)" (Kilbourne, 2004, p. 193). SC is "an interactive social process of unravelling and eradicating ecological alienation that may occur between an organization and its publics or stakeholders" (McDonagh, 1998, p. 599). By use of "green, eco or environmental communications" and "the approach of … environmental consciousness and consensus" (ibid. p. 599).

As a direct outcome of green practices with consumers (Peattie, 1992; Welford & Gouldson, 1993), organizations need to "give information about their environmental claims on a right to know basis" (McDonagh, 1998, p. 600). Organizations "must be both open and honest in their communication with the public" (ibid. p. 600).

SC encourages participative communication wherever possible (Bernstein, 1992). This is important for public participation in sustainable development (Bernstein, 1992; McDonagh, 1998). The process of SC is conceived as "a way of helping society move from hyper consumption to sustainable consumption" (McDonagh, 1998, p. 600).

SC is characterized as "… working towards a world where humankind can preserve rather than dominate nature" (ibid. p. 600). It is important for two reasons. SC aims to bring organizations and stakeholders into partnership (McDonagh, 1998; Peattie, 1992), with messages producing meaningful responses (Munter, 1987), "yielding mutual benefit" (McDonagh, 1998, p. 600).

McDonagh's (1998) "model for sustainable communication" (as cited in Kilbourne, 2004, p. 193) essentially consists of 4 building blocks (McDonagh , 1998, p. 602): (1) Ecological Trust; (ii) Ecological Access; (iii) Ecological Disclosure; and (iv) Ecological Dialogue, as explained in Table 2 SCM.

McDongh's Sustainable Communication Model (SCM)	
(i)	Ecological Trust (ET) is a two-way process and builds confidence among business leaders and stakeholders leading to "ecological legitimation" (McDonagh, 1998, p. 602).
(ii)	Ecological Access (EA) refers to "the issues of openness and disclosure of information" (ibid. p. 603). Openness and disclosure of information help build "a real willingness to create and build trust" (ibid. 603).
(iii)	Ecological Disclosure (EDis) emphasizes the concept that companies which have disclosed the truth about what they do are more likely to be trusted than those organizations where the truth has been found out (McDonagh, 1998; Sturges, 1992). Corporate Environmental Report is a good example for EDis (Elkington, 1998; IISD, 1996).
(iv)	Ecological Dialogue (EDia) refers to the "ecological dialogue by an organization with its publics on issues of sustainability" (McDonagh, 1998, p. 603). EDia needs to be "on-going … to help them (i.e. the organization and the publics) understand the issues, making them 'ecologically meaningful" (p. 603).
Table 2 SCM	

The 4 building principles (ET, EA, EDis & EDia) interactively form the new 'communicative theory for issues of sustainability' (McDonagh, 1998, p. 602).

Fig. 2 PSC illustrates the interaction of McDonagh's (1998) model for sustainable communication.

Fig. 2 PSC

Modified from McDonagh's (1998, p. 601) The Process of Sustainable Communication
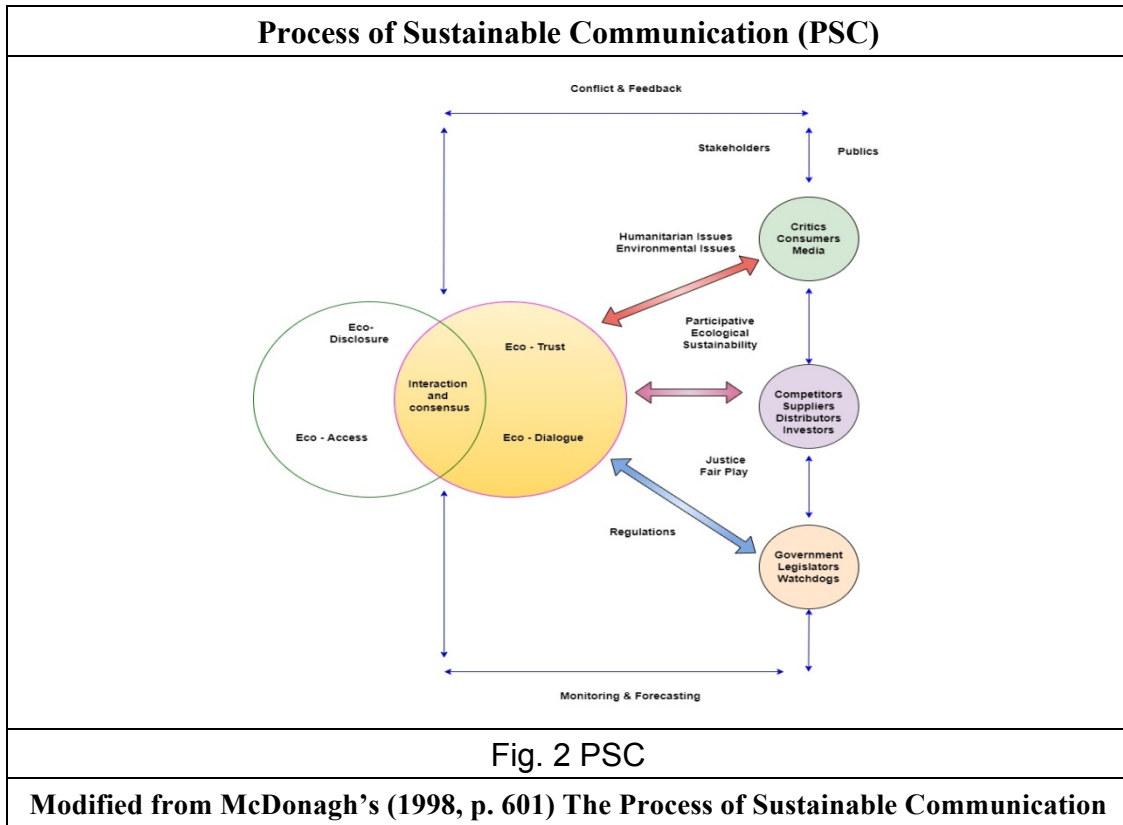
Integrated CSR Communication Framework

In their study, Pezet & Casalegno (2017) developed an integrated CSR Communication Framework to improve "relations with stakeholders and increase a positive communication" (p. 99) which can also affect financial markets (Salvioni & Bosetti, 2014). CSR communication is "fundamental for creating awareness of corporate initiatives and social, environmental and ethical issues" (Pezet & Casalegno, 2017, p. 99) for achieving credibility (Ricotti, 2003).

Pezet & Casalegno (2017) argue that this framework can compromise different interests, actions, and initiatives among different stakeholders through 3 dimensions. They are Stakeholder Communication (StC), Communities Communication (CoC), and Partners Communication (ParC). Table 3 ICSR summarizes the coverages of StC, CoC and ParC.

Coverages of StC, CoC and ParC	
(1)	Stakeholder Communication (StC) covers "Standard and Norms" (De Colle, et al., 2014) which refers to a firm's reporting activity, in compliance with the law or general convention. StC aims to inform a firm's stakeholders of its initiatives and results of responsibility and sustainability. The deliverance of StC is based on sustainable reports (e.g. Financial Statements & Sustainability Report) on codes of conduct, ethical codes, press communications, local events, official web pages and internal mail system).

	All stakeholders are informed of managerial policies over environment, diversity management, inclusion of protected categories within the business structure, quality standards, ethics, and human rights.
(2)	Communities Communication (CoC) covers "Strategic Philanthropy" (Porter & Kramer, 2002) which represents all those activities carried on to satisfy communities' demands and supporting local development projects and social initiatives. CoC refers to building and feeding relationships with the communities which are in various ways influenced by the firm. The best way to communicate the firm's sincerity is to commit and plan local events, sponsorships, and partnership with local stakeholders (Lambin & Brondoni, 2000). Website content, social media, social reports, press releases and internal mailing system are some useful and helpful tools for CoC.
(3)	Partners Communication (ParC) covers "Integrated Outputs" (Casalegno & Civera, 2016) which refers to products, services, processes, and policies, linked to the CSR concept. ParC (which includes employees, suppliers, retailers, customers / consumers / users) covers all undertaken actions concerning products (goods or services), implemented processes and policies. The common topics addressed in ParC cover reduced-impact process in production, use of compostable or biodegradable materials, sustainable policies concerning the supply chain, employee management in terms of welfare and 'internal philanthropy" (Casalegno & Civera, 2016; Nazeer, 2011), and product packaging in terms of if the material can be recycled, compostable or totally biodegradable, signifying the firm's environmental commitment. All these demonstrate the firms' economic, environmental, and social sustainability behavior (Perrini, 2005).

The common tools for ParC are websites, social network pages, sustainability reporting, codes of ethics, financial statements and internal communication platforms.

Table 3 ICSR

Fig. 3 ICCF (Integrated CSR Communication Framework) exhibits the different elements constituting the 3 dimensions of StC, CoC and ParC.

Fig 3 ICCF
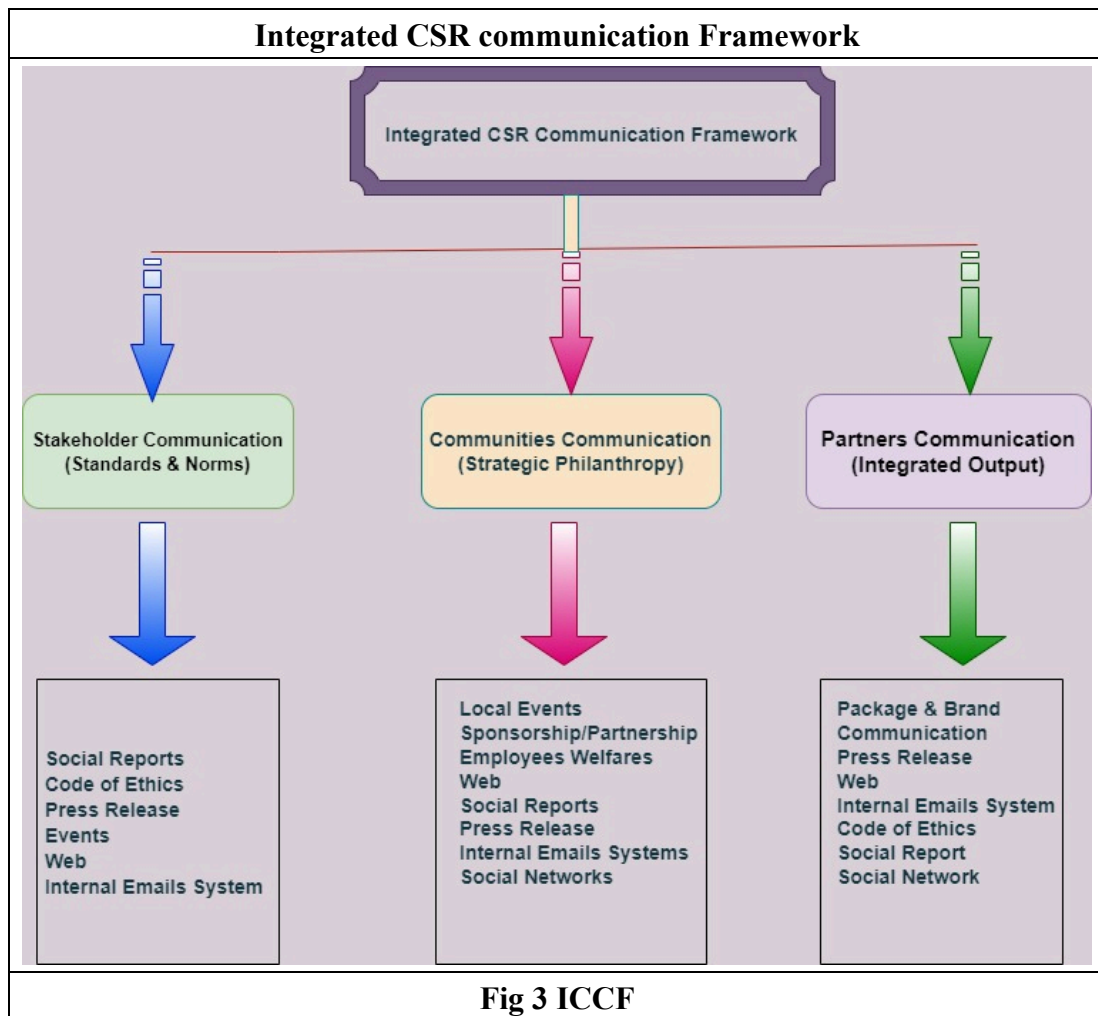
Integrated Communication for Organization Sustainability

Integrated communication is a tool for organizations to keep an open and transparent dialogue with their stakeholders (Bittner-Fesseler & Weicht, 2020; Ina & Serban, 2013; Paliokaite et. al., 2014), striving for "consensus orientation" (Sueldo, 2016, p. 121). Integrated communication is important for realizing organizational communication (Brondoni, 2006; Gnecchi, 2006; Pezet & Casalegno, 2017). It can enable a collaborative understanding, and a   long-lasting, equalizing and well- balanced relationship between the different internal and external stakeholders and the organization (Bellini & Brondoni, 2016; Grunig, 2001; Inia & Serban, 2013; Morsing & Schultz, 2006; Siano et. al., 2015).

In their study, Taljaard & de Beer (2019) concluded that integrated communication "has a

distinct relationship with stakeholder engagement, corporate governance … and the resource perspective of organizations, influencing sustainability" (p. 14). Stakeholder engagement is important in planning the integrated communication (Wheeler & Sillanpaa, 1998).

Candea & Candea (2009) define integrated communication for an organization as the organization's communication which integrates the communication activities with the organization's relevant stakeholders, with a central aim of developing the organization's sustainability perspectives and includes the theme of sustainability in all its activities and messages.

Ina & Serban (2013) argue that integrated communication can help the success of sustainability communication because of its focus on organizations' internal and external stakeholders with feedbacks and mutual interactions through transparent, trustworthy and clear messages (Gronstedt, 2000), and its intentional encouragement of these organizations to be more concerned with maintaining a permanent bond between themselves and their stakeholders (Brugha & Varvasovszky, 2000; Schmeer, 2010). In their studies, Sueldo (2016) and others (Brondoni, 2006; Brugha & Varvasovszky, 2000; De Colle & Gonella, 2003; Gnecchi, 2006; Pezet & Casalegno , 2017; Inia & Serban, 2013) identified and emphasized the crucial importance of integrated communication as a strategy for establishing, nurturing and maintaining "long term and strong relationships with stakeholders" (Pezet & Casalegno, 2017, p. 96).

Possible Success Factors for Integrated Sustainability Communication (ISC)

In reviewing literature on corporate & organizational sustainability communication, nine possible success factors have been identified:

(1)   Transparency of organizational activities with the use of sustainability reporting (Inia & Serban, 2013; Perri, 2005).

(2)   Presence of a transparent and open dialogue between stakeholders and organizations (Frig, 2021; Hajer, 2995; Lueneburger & Goleman, 2011; Yang et al., 2010).

(3)   Presence of stakeholder analysis to improve the communication and relation between stakeholders and organizations (Brugha & Varvasovky, 2000).

(4)   Consistency of outgoing internal and external messages (DuPlessis & Schoonaad, 2006; Maple et. al., 2015; Mihai, 2017).

(5)   Communication contents and processes being interactive (Morsing & Schutz, 2006) and aligned with organizations' strategy, practice(s) and vision(s) on sustainability (DuPlessis & Schoonaad, 2006; Kataria et. al., 2013; Moser, 2010).

(6)   Presence of communication focus on bringing of trust, understanding, support and lasting partnerships with internal stakeholders (employees) and external stakeholders (clients, suppliers, shareholders and other organizations in relationships and business connection) (Freeman et al., 2010; Laplume et al., 2008) despite their different interests (Lambin, 2009).

(7)   All stakeholders being considered equally important to organizations (Freeman et. al., 2010; Inia & Serban, 2013; Taljaard & de Beer, 2019).

(8)   Striving for "consensus orientation" (Sueldo, 2016, p. 121) with maximum reduction on environmental, economic and societal impact (Sanchez-Planelles et al., 2021).

(9)   Alignment of communication messages with organizations' sustainability strategy based on understanding of sustainability (Bittner-Fesseler & Weicht, 2020).

Suggestive guideline for selecting the appropriate communication typology for use

Referencing to the literature review conducted and ISC, a brief summarizing review on the format of communication, and measure of effectiveness for the 4 typologies of communication (CaS, CoS, CfS & ICS) (See Table 4 TGCM) has been elaborated. It serves as a quick reference guide to selecting the appropriate communication typology for use in an organization and a guiding direction for the development of an organization sustainability communication model in this paper.

Table Guiding the Selection Decision on Communication Mode for Use		
Typology	Format of Communication	Measure of Effectiveness
Communication about Sustainability (CaS)	Deliberative Horizontal Many to many	(i) Discourse oriented (ii) Quality of discourse (iii) Compatibility of concepts to sustainability
Communication of Sustainability (CoS)	Transmissive Sender-receiver One to many	(i)Sender-oriented (ii) Achievement of sender's communication objective(s)
Communication for Sustainability (CfS)	Educating students or the public Participatory dialogues	(i)Students & public oriented (ii) Quality of the education (iii) Degree of participation
Integrated Communication for Sustainability (ICS)	Addressing internal & external stakeholders Corporate governance focusing on	(i)Interaction between organization & stakeholders through clear, transparent & trustworthy messages & feedbacks, open dialogue(s) &

	stakeholder-engagement	sustainability reporting
		(ii) Presence of stakeholder analysis for improving interactive relationship
		(iii) Consistency of outgoing internal & external messages
		(iv) Alignment of communication contents & processes with organization's strategy, practice(s) & vision(s) on sustainability
		(v) Presence of mutual trust, understanding, support & lasting partnership between organizations & stakeholders
Table 4 TGCM		

Organization Sustainability Communication Model (OSCM)
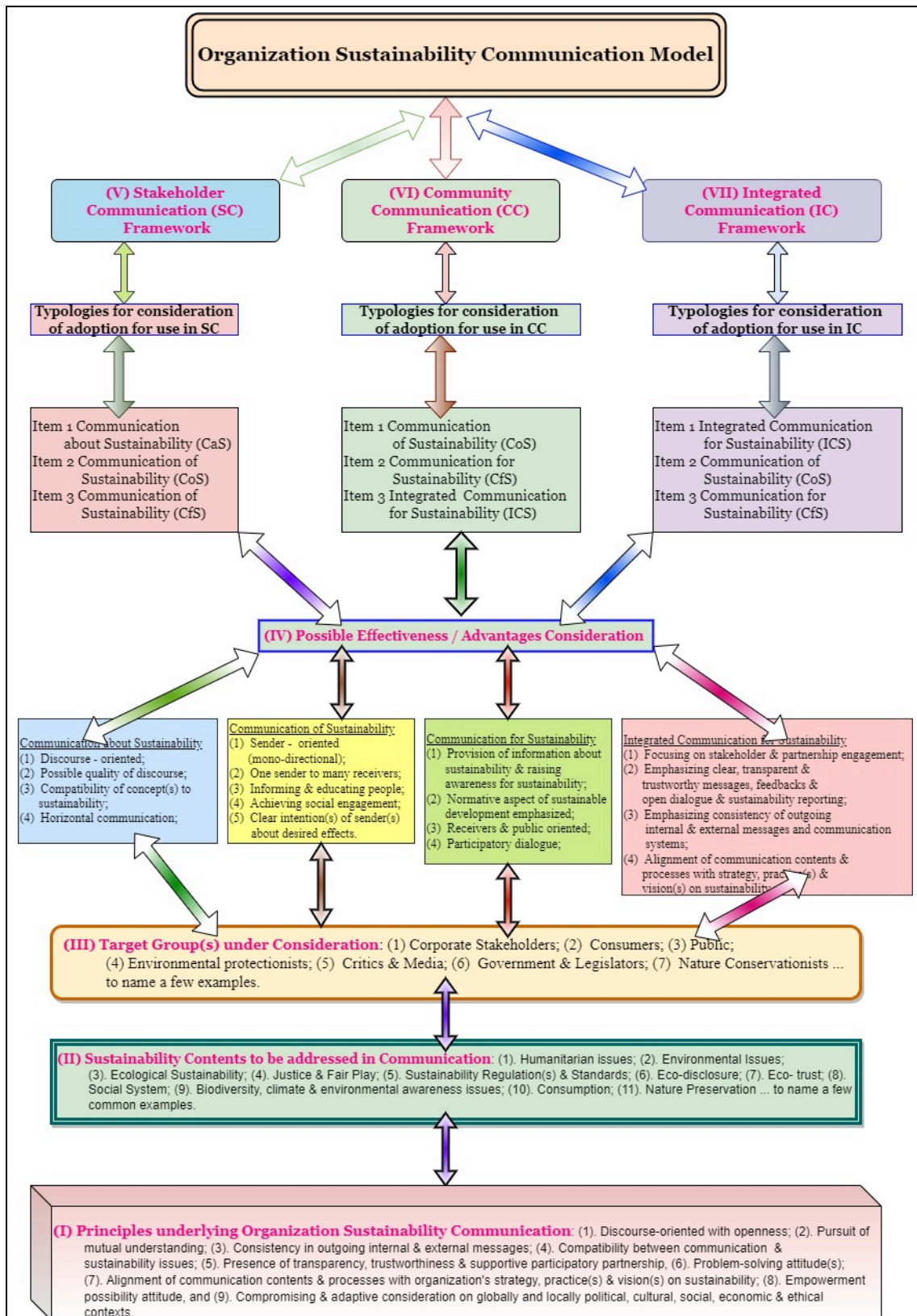
Fig 4 OSCM

The OSCM model building process (Fig 1 MBP) was used to collect, observe, compare, associate, and categorize data into components with essential elements identified to constitute an organization sustainability communication model (Fig 4 OSCM). In Fig 4 seven constituent components, listed below, are identified as (I) – (VII).

- Principles underlying corporate sustainability communication
- Sustainability contents to be addressed
- Target group(s) under consideration
- Possible effectiveness / advantages consideration
- Stakeholder Communication (SC) Framework
- Community Communication (CC) Framework
- Integrated Communication (IC) Framework

All these components are interchangeably interactive, as indicated by the arrows in Fig 4, to trace back and forth to identify the best approach / approaches for designing and developing the OSC for use.

The OSCM is essentially composed of 3 Corporate Sustainability Communication Frameworks, numbered (V) – (VII) in Fig 4 OSCM.

The four typologies for deciding on the adoption of the most appropriate Organization Sustainability Communication Framework (OSCF) to use are shown in the blue, yellow, green, and pink boxes (See Fig 4 OSCM).

Components (I), Principles underlying OSC, provides 9 principles that forms the fundamental backbone and a reflexivity consideration of success factors for "self-referentiality" (Ziemann, 2011, p. 93) in the formation and development of OSC.

Components (II), (III), and (IV) give guidelines for the organization communicator(s) / management to design sustainability communication and decide on the best typology / typologies (CaS, CoS, CfS and / or ICS) to be adopted for use in one of the sustainability communication frameworks (i.e. SC, CC & IC). The aim of these components is to enable organization communicator(s) / management to "develop the competences" to "adequately interpret the often contradictory … information available" and realize sustainability communication in the face of "complex societal challenges" (AdomBent & Godemann, 2011, p. 27).

Contribution to Higher Education

There has been "a growing awareness in national and international policies of the need to integrate sustainability" into higher education (HE) (Djordjevic & Cotton, 2011, p. 381). Higher Education Institutes (HEIs) play "a key role in building more sustainable societies" (Katiliute et. al., 2014, p. 106).

In their studies, Flip & Georgescu (2019) and others (Cotton et. al., 2009; Hoover & Harder, 2014; Lozano, 2018; Nicholls et al., 2013; SEAG, 2020; Wilhelm, 2012) have acknowledged the important role played by higher education institutes (HEIs) in advocating the integration of sustainability into HE and their curricula. Universities need to become "sustainability leaders and change drivers" and to ensure that "the needs of present and future generations be understood" (Lozano et al., 2013, p.10) "to meet industry's needs" (Nicholls et al., 2013, p.

138). In this context and given the recent business failures, financial crises, and damaging economies around the world (Lee et al., 2013; Nicholls et al., 2013; Nicolaides, 2006), students in higher education can be prepared with sufficient "sustainability education … to gain knowledge of sustainability concepts" (SEGA, 2020, p. 8) to improve and minimize "business impacts on society" (Lange, 2013, p. 112).

However, "many universities are still lagging behind companies in helping societies become more sustainable" (Lozano et al., 2013, p. 10). Nonetheless, in their study, Djordjevic & Cotton (2011) have found that encountering the difficulty of "communicating … about sustainability successfully" (p. 381) is common in HE.

The study of Djordjevic & Cotton (2011) indicated that "lacking of an agreed definition or shared understanding of sustainability", "individual differences in values and attitudes" (p. 381) and lacking of "open dialogue" (p. 392) are major factors hindering the success of sustainability communication in HE. "The view of sustainability … is an unclear and shifting issues for some universities" (de Lange, 2013, p. 106).

In her study, de Lange (2013) concluded that as "producers of knowledge industry" (p. 104) HEIs needs to have effective sustainability communication for success in adopting sustainability into HE and their curricula.

The investigations of Djordjevic & Cotton (2011), Franz-Balsen & Heinrichs (2007) and Lozano et. al. (2018) concluded that effective organization communication is a key for moving universities towards becoming sustainable HEIs. Effective communication is integral to successful sustainability (Cornelissen, 2008; Corner & Hawthorn, 1993; Karatzoglou, 2012; Lozano, 2018; Siano et al., 2013; Taljarrd & de Beer, 2019).

OSCM is of value to HEIs. Given the complexity of sustainability in HE (Hoover & Harder, 2014), OSCM serves as a referential guide and a tool for HEIs to manage their sustainability communication to meet "sustainability challenges" (Katiliute et. al., 2014, p. 106) and to remove the "confusion about sustainability" (de Lange, 2013, p. 104). With guidelines and open dialogue as recommended in OSCM (See Fig. 4), HEIs can have a direction about how to proceed and succeed in sustainability communication, and be "more likely to become sustainability advocates … and leaders in the global movement towards a sustainable economy" (Wilhelm, 2012, p. 58).

Conclusion

Considering the increasing importance of organization communication on sustainability (Ziemann, 2011), developing an organization communication model with a theoretical foundation that would help organizations to design and execute sustainability communication is felt to be necessary (AdomBent & Godemann, 2011). This paper has developed one such Organization Sustainability Communication Model for consideration by different organizations when deciding on how to approach sustainability communication.

OSCM can be taken as a referential "stimuli to encourage a change" (Siano et al., 2013, p.16) in the perception, designing and management of organization communication based on a set of seven components as set out in Fig 4 OSCM. Using OSCM organization sustainability practitioners / management will be equipped with "a set of technical skills" (ibid. p. 16) better to manage their sustainability communication.

Further Research Agendas

The study in this paper has focused on the explorative and descriptive theory building process to develop an organization sustainability communication model (shown in Fig 4 OSCM). Further investigation is needed to improve this theoretical model through testing and practical implementation in organizations to validate its workability. Such investigations would need fully to consider other variables affecting OSC, such as industry type and firm size. Further investigations would also need to be conducted in different countries to validate its generalizability.

The following issues require to be examined in further studies to refine the feasibility of OSCM.

    (1)   In view of financial and manpower constraints, can stakeholder analysis be conducted in small sized organizations and HEIs?

    (2)   What managerial stance in the adoption of OSCM should be taken by small sized organizations and HEIs given considerations of financial budgeting?

    (3)   What are the ideal principles for resolving conflicts arising from different interests in sustainability?

    (4)   What are the necessary abilities and traits needed by the organization communicators to provide effective sustainability communication?

    (5)   What are the barriers that would possibly hinder the realization and development of organization sustainability communication?

    (6)   What is the ideal organizational infrastructure needed for OSC to take place successfully?

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References

AdomBent, M. & Godemann, J. (2011). Sustainability Communication: An Integrative Approach. In Sustainability Communication: Interdisciplinary Perspectives and Theoretical Foundation; Godemann, J. & Michelsen, G (Eds). Springer: Dordrecht

Allen, M. (2016). Strategic Communication for Sustainable Organizations Theory and Practice. Cham Heidelberg New York Dordrecht London: Springer.

Aranha, E.A., Garcia, N.A.P., da Silva, G.N.R. & Santos, P. (2017). Open Innovation and Business Model in Brazilian Small Business . International Journal of Business Management and Economic Research, Vol. 8(5), 2017, 1008 – 1015.

Babiak, K. & Trendafilova, S. (2011). CSR and environmental responsibility: Motives and pressures to adopt green environment practices. Corporate Social Responsibility and Environmental Management, 18, 11 – 24.

Barth, M. (2012). Social learning instead of educating each other. GAIA 2012, 21, 91 – 94.

Bellini, N. & Brondoni, S.M. (2016). Ouverture de Global Torusim in Global Markets, Symphonyz. Emerging Issues in Management (symphony.unimib.it), 1, 1-6

Berger, P.L. & Luckmann, T. (1966). The social construction of reality: A treatise in the sociology of knowledge. Garden City, NY: Anchor Books.

Brondoni, S.M. (2006). Corporate Communication and Global Markets. Symphonya. Emerging issues in Management, 2, pp. 9 – 37.

Brondoni, S.M. (2014). Global Capitalism and Sustainable Growth. From Global Products to Network Globalization, Symphonya. Emerging Issues in Management (symphony.unimib.it), n. 1, pp. 10 – 31

Brand, K.W. (2011). Sociological Perspectives on Sustainability Communication. In Sustainability Communication: Interdisciplinary Perspectives and Theoretical Foundations; Godemann, J. M. & Michelsen, G. (Eds). Springer: Dordrecht, The Netherlands, pp. 55 – 68.

Brugger, F. (2010). Nachhaltigkeit in der Unternehmenskommunikation. Bedeutung, Charakteristika und Herausforderungen. Wiesbaden: Gabler Verlag.

Candea, RM & Candea, D. (2009). "Communicare corporative integrate pentru sustenabilitatea afacerii", Intreprinderea sustenabila – Studii si cercetari, Serie de publicatii ale Centrul de Eco-Management, vol.4, UTPRES, Cluj-Napoca, pag. 41 – 57.

Casalegno, C. & Civera, C. (2016) "Impresa e CSR: La «Non comunicazione» di successo. Regole per una gestione responsabile delle relazioni". Increase, Franco Angeli

Christensen, C.M. & Carlile, P.D. (2009). Course Research: Using the Case Method to build and Teach Management Theory. Acad. Manage. Learn. Educ. 2009, 8, pp. 240 – 251.

Cornelissen, J. (2008). Corporate Communication: A Guide to Theory and Practice. Sage: London.

Corner, J. & Hawthorn, J. (Eds). (1993). Communication Studies: An Introductory Reader. Edward Arnold: London.

Cosenz, F., Rodrigues, V.P. & Rosati, F. (2020). Dynamic business modelling for sustainability: Exploring a system dynamics perspective to develop sustainable business models.

Cotton, D.R.E., Bailey, I., Warren, M. & Bissell, S. (2009). "Revolution and second-best solutions: education for sustainable development in higher education", Studies in Higher Education, Vol. 34, No. 7, pp. 719-733.

Da Silva, C. (2020). From one context to another: How business models emerge, Journal of Business Models, Vol. 9, N. 1, pp. 8 – 12

De Colle, S. & Gonella, C. (2003). Corporate Social Responsibility: the need for an integrated management framework. International Journal of Business Performance Management, vol. 5, n. 2-3, pp. 199 – 212.

De Colle, S., Henriques, A., Saras, S. (2014). The paradox of corporate social responsibility standards. Journal of Business Ethics, vol. 125, n. 2, pp. 177 – 191.

De Lange, D.E. (2013). How do Universities Make Progress? Stakeholder-Related Mechanisms Affecting Adoption of sustainability in University Curricula. Journal of Bus. Ethics (2013) 118: pp. 103-116.

Djordjevic, A. & Cotton, D.R.E. (2011). Communicating the sustainability message in higher education institutions. International Journal of Sustainability in Higher Education. Vol. 12, No. 4, 2011.

Du Plessis, D.F. & Schoonraad, N. (2006). Integrated communication measurement, in R. Barker & R Angelopulo (Eds), Integrated Organizational Communication, Cape Town: Juta.

Elkington, J. (1998). Cannibals with forks. London: Sustainability Ltd.

Filip, A.I. & Georgescu, D.N. (2019). The Role of Higher Education in creating Sustainable Leaders. Ovidius University Annais, Economic Sciences Series. Volume XIX, Issue 1/2019.

Franz-Balsen, A. & Heinrichs, H. (2007). "Managing sustainability communication on campus: experiences from Luneburg", International Journal of Sustainability in Higher Education, Vol. 8 No. 4, pp. 431-445.

Freeman, E., Harrison, J., Wicks, A., Parmar, B. & De Colle, S. (2010). Stakeholder Theory, The State of Art. UK: Cambridge University Press.

Frig, Meri-Marria. (2021). Mediated business sustainability communiciation for a better world. Unpublished PhD Thesis. Hanken School of Economics. Helsinki.

Funtowicz, S.O. & Ravetz, J.R. (1993). Science for the post-normal age. Futures 1993, 25, 739 – 755.

Genc, R. (2017). The Importance of Communication in Sustainability & Sustainable Strategies. Procedia Manufacturing 8 (2017) 511 – 516

Gnecchi, F. (2006). Corporate Governance Communications. Symphonya. Emerging Issues in Management (symphony.unimib.it), n. 1, pp. 47 – 61.

Godemann, J. & Micehelsen, G. (2011). Sustainability Communication – An Introduction. In Sustainability Communication. In Godeman, J. & Michelsen, G. (Eds),Interdisciplinary Perspectives and Theoretical Foundations. UK: Springer.

Gronstedt, A. (2000). The customer century. Lessons from world-class companies in integrated marketing and communications. New York: Routledge.

Grunig, J.E. (2001). Two way symmetrical public relations: Past, Present and Future. In R. e. Health (Ed.) Handbook of Public Relations (pp. 11 – 30). Thousand Oaks, CA: Sage.

Hajer, M. (1995). The politics of environmental discourse: Ecological modernization of the political process. Oxford: Clarendon.

Hoffstaedter, F. (2020). Internal and external communication for sustainable development: Case study on the municipality of Gnosjo. Jonkoping University. Unpublished Master Thesis, Spring 2020.

Hoover, E. & Harder, M.K. (2014). What lies beneath the surface? The hidden complexities of organizational change for sustainability in higher education. J. Clean.Prod. 2014.

Inia, A. & Serban, O. (2013). Integrated Communication For Organizational Sustainability. Managerial Challenges of the Contemporary Society. Proceedings; Cluj-Napoca, Vol. 5, 111-114. Cluj-Napoca: Babes Bolyai University. (2013)

IISD (1996). International Institute for Sustainable Development (1996). http://iisd.ca/business/key1.htm

Jabareen, Y. (2009). Building a Conceptual Framework: Philosophy, Definitions and Procedure. Int. J. Qual. Methods 2009, 8, 49-62

Karatzoglou, B. (2012). An in-depth literature review of the evolving roles and contributions of universities to Education for Sustainable Development. Journal of Cleaner Production, 49, 44-53.

Kataria, A., Kataria, A.K. 7 Garg, R. (2013). Effective Communication A Way Towards Sustainability. IJBIT,. Vol. 6, Issue 2, April – September 2013.

Katillute, A., Daunoriene, A. & Katkute, J. (2014). 19th International Scientific Conference; Economics and Management 2014, ICEM 2014, 23-25 April 2014, Riga, Latvia.

Ki, E.J. & Shin, S. (2015). Organization sustainability communication (OSC): Similarities and differences of OSC messages in the United States and South Korea. Computers in Human Behavior. 48 (2015) 36 – 43.

Kilbourne, W.E. (2004). Sustainability Communication and the Dominant Social Paradigm: Can They Be Integrated? Marketing Theory 2004; 4: 187.

Kommunikationstheoretische. Fundierung. In G. Michelsen & J. Godemann (Eds). Handbuch Nachhaltigkeitskeiskommunikation. Grundlagenund Praxis (pp. 123 – 133). Munich: Oekom

Lambin, J-J. & Brondoni, S.M. (2000). Ouverture de ' Market-Driven Management', Symphonya. Emerging Issues in Management (www.unimib.it/symohonya), n. 2, 2000 – 2001, pp. 7 – 18.

Lambin, J-J. (2009). Capitalism and Sustainable Development, Symphonya. Emerging Issues in Management (symphony.unimib.it), n. 2, pp. 3-9.

Laplume, A.O., Sonpar, K. & Litz, R.A. (2008). "Stakeholder Theory: Reviewing a Theory That Moves Us", Journal of Management. Vol. 34, Issue 6, December 2008.

Lee, K.H., Barker, M. & Mouasher, A. (2013). Is it even espoused.? An explorative study of commitment to sustainability as evidenced in vision, mission, and graduate attribute statements in Australian universities. J. Clean. Prod. 2013, 48, 20-28.

Leitzke, M.R.L. & Marchiori, M.R. (2016). Communication and sustainability: A discussion about the term "Sustainability Communication" as a process of building sustainable values in organizations. Organizcoes e Sustentabilidade, Londrina, v. 4, n. 2, pp. 92 – 115, jul./dez. 2016.

Lozano, R., Lukman, r., Lozano, F.J., Huisingh, D. & Lambrechts, W. (2013). Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. J. Clean.Prod. 2013, 48, 10-19.

Lozano, R. (2018). Proposed a Definition and a Framework of Organizational Sustainability: A Review of Efforts and a Survey of Approaches to Change. Sustainability. 2018, 10, 1157.

Lueneburger, C. & Goleman, D. (2011). "The Change Leadership Sustainability Demands", MITSloan Management Review. The Sustainability / Talent Formula, SloanSelect Collection, iunie 2011.

Maple, P., Civera, C. & Casalegno, C. (2015). An investigation of "The Spectrum of Corporate Social Responsibility." Or to be more precise: Over-communication – a comparative analysis of the UK and Italian banking sectors from the customers' perspective. 4 Summit, Vienna 2015.

McDonagh, P. (1998). Towards a theory of Sustainable Communication in Risk Society: Relating issues of sustainability to marketing communication. Journal of Marketing Management, 14:6, 591 – 622.

Mihai, R.L. (2017). Corporate Communication Management. A Management Approach. Valahian Journal of Economic Studies. Volume 8 (22). Issues 2, 2017.

Moser, S.C. (2010). Communicating climate change: History, challenges, process and future directions. WIREs Clim. Change. 2010, 1, 31 -53.

Morsing, M. & Schultz, M. (2006). "Corporate social responsibility communication: Stakeholder information, response and involvement strategies", Business Ethics: A European Review, Vol 15 Nr. 4.

Munter, M. (1987). Business Communication: Strategy and Skill. Englewood Cliffs, N.J.: Prentice Hall.

Nazeer, S. (2011). The competitive advantage of corporate philanthropy. Unpublished MBA Thesis, 9 November 2011. Gordon Institute of Business Science, University of Pretoria.

Nerlich, B., Koteyko, N., Brown, B. (2010). Theory and language of climate change communication. WIREs Clim. Chang. 2010, 1, 97 – 110.

Newig, J., VoB, J-P. & Monstadt, J. (2008). Governance for Sustanability Development: Coping with Ambivalence, Uncertainty and Distributed Power. Routledge: Londeon, UK, 2008.

Newig, J., Schutz, D., Fischer, D., Hetze, K., Laws, N., Ludecke, G. & Rieckmann, M. (2013). Communication Regarding Sustainability: Conceptual Perspectives and Exploration of Societal Subsystems. Sustainability 2013, 5, 2976 – 2990.

Newig, J. (2011). Climate Change as an Element of Sustainability Communication. In J. Godmann & G. Michelsen (Eds), Sustainability Communication: Interdisciplinary Perspectives and Theoretical Foundations. Springer: Dordrecht, The Netherland.

Neidhardt, F. (1993). The public as a communication system. Public Underst. Sci. 2, 339 – 350.

Nicholaides, A. (2006). The implementation of environmental management systems for enhancing education for sustainable development as an ethical imperative. In. J. Sustain. Hig. Educ. 2006, 7, 414-424.

Nicholls, J., Hair, J.F., Ragland, C.b. & Schimmel, K.E. (2013). Ethics, Corporate Social Responsibility, and Sustainability Education in AACSB Undergraduate and Graduate Marketing Curricula: A Benchmark Study. Journal   of Marketing Education 35(2) 129-140.

Nicotera, A.M. & Putnam, L. (Ed.) (2009). Building theories of organization. The Constitutive role of communication. Ebrary, Inc. New York: Routledge (Communication series. Organizational communication).

Osterwalder, A. (2004). The BUSINESS MODEL ONTOLOGY: A PROPOSITION IN A DESIGN SCIENCE APPROACH. Unpublished PhD Thesis. De l'Universite de Lausanne, 2004.

Ouverture de 'Global Networks and Sustainable Development – 1', Symphonya. Emerging Issues in Management (symphony.unimb.it), 1, 1 - 9

Paliokaite, A., Pacesa, N. & Sarpong, D. (2014). Conceptualizing Strategic Foresight: An Integrated Framework. Strat. Change 23; 161 – 169 (2014).

Peattie, K. (1992). Green Marketing. London: Pitman Publishing.

Perri, F. (2005). Building an European Portrait of Corporate Social Responsibility Reporting. European Management Journal, vol., 23, n. 6, pp. 611 – 627.

Perrini, F. (2005). Building a European Portrait of Corporate Responsibility Reporting. European Management Journal, vol. 23, n. 6, pp. 611 – 627.

Pezet, E. & Casalegno, C. (2017). Balancing Under and Over Communication in Sustainability. Symphony. Emerging Issues in Management (symphony.unimib.it), n. 1, 95 – 110, 2017

Porter, M.E. & Kramer,M.R. (2002). The competitive advantage of corporate philanthropy. Harvard Business Review, Vol. 80, n. 12, pp. 56 – 68.

Rasche, A., Morsing, M. & Moon, J. (2017). Corporate Social Responsibility. Strategy, Governance & Governance. Cambridge: Cambridge University Press.

Ricotti, P. (2003). Corporate Responsibility and Sustainability Development. Symphonya. Emerging Issues in Management (symphony.unimib.it), n. 1, spp. 84 – 98.

Salvioni D. M. & Bosetti, L. (2014). Sustainable Development and Corporate Communication in Global Markets, Symphonya. Emerging Issues in Management (symphony.unimib.it), n. 1, pp. 1 – 19.

Sanchez-Planelles, J., Segarra-Ona, M. & Peiro-Signes, A. (2021). Building a Theoretical Framework for Corporate Sustainabiity. Sustainability, 2013, 13, 273.

Schmeer, K. (2010). "Stakeholder Analysis Guidelines", http://www.eestum.eu/voorbeelden/Stakeholders_analysis_guideline.pdf

Siano A., Vollero A., Confetto, M.G. & Siglioccolo, M. (2013). "Corporate Communication Management: A Framework based on decision making with reference to communication resources". Journal of Marketing Communications. Vol, 19, n. 3, pp. 151 – 167.

Siano A., Vollero A. & Siglioccolo, M. (2015). Corporate Communication Management. Torino: Giappichelli.

Signitzer. B. & Prexl, A., (2008). Corporate sustainability communications: Aspects of theory and professionalization. Journal of Public Relations Research, 20(1), 1-19.

Sturges, J. (1992). "Who will top the corporate league" Marketing Week, February 7, p. 17

Sueldo, M. (2016). The impact of integrated organizational communication on organization sustainability. Organizaciju Vadyba: Sisteminiai Tyrimai, 2016.

Sustainable Education Advisory Group (SEAG). (2020). 2020 Sustainability Course Evaluation Report. Hong Kong University of Science and Technology.

Taljaard, A. & de Beer E. (2019). Integrated Communication for organization sustainability – An integrated communication relationship model as communication management tool. J. Public Affairs. 2019; 19:e1957. https://doi.org/10.1002/pa.1957.

Taran, Y., Nielsen, C., Thomsen, P., Montemari, M., & Paolone, F. (2015). Business Model Process Configurations: A Mapping Tool For Fostering Innovation. In R & D Management Conference Pisa.

Van Marrewijk, M. & Werre, M. (2003). Multiple levels of corporate sustainability. Journal of Business Ethics, 44, 107 – 119.

Weidner, H. N. (2004). Vom Staatspessimismus zur Zivilgesellschaftseuphorie? In Zivilegesellschaft – National Und Transnational (in German); Gosewinkel, D., Rucht, D., van den Daele, W., Kocka, J. (Eds); Edition Sigma: Berlin, Germany, 2004, pp. 383 - 410

Weiggart, P., Engels, A. & Pansegrau, P. (2000). Risks of communication: Discourses on climate change in science, politics, and the mass media. Public Underst. Sci., 9, 261 – 283.

Welford, R. & Gouldson, A. (1993). Environmental Management and Business Strategy. London: Pitman Publishing.

Wheeler, D. & Sillanpaa, M. (1998). Including the stakeholders: The business case. Long Range Planning, 31(2), 201 – 210. https://doi,org/10.1016/50024 - 6301(98)00004-1

Wilhelm, W.B. (2012). Incorporating Sustainability into the Business Curricula: Ecological Footprint Analysis. Business Education Innovation Journal. Volume 4, Number 1. June 2012.

Wilson, M. (2003). Corporate sustainability: What is it and where does it come from? Ivey Business Journal, 1 – 5.

Yang, J., Shen, G.Q., Ho, M.F., Drew, D.S. & Xue, X.L. (2010). "Stakeholder Management in Construction: An Empirical Study to Address Research Gaps in Previous Studies". International Journal of Project Management, Vol. 29, Issue 7.

Ziemann, A. (2007). Kommunikation de Nachhaltigkeit. Eine

Ziemann, A. (2011). Communication Theory and Sustainability Discourse. In Sustainability
    Communication: Interdisciplinary Perspectives and Theoretical Foundation;
    Godemann, J. & Michelsen, G (Eds). Springer: Dordrecht

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Students' Experience Two Years Into the Pandemic at a Bulgarian University

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Official Conference Proceedings

Abstract

After the pandemic began in March 2020, universities in Bulgaria suspended in-person learning. In the current 2021-22 academic year, schools shut down again in areas of Bulgaria where COVID-19 infection rates spiked, returning students to online learning. This study investigates the experiences of undergraduate students at a Bulgarian university about the impacts of the pandemic on the classes, the satisfaction level with online learning, as well as their perceived impacts on daily life, economic situation, health condition, stress, and life planning. A questionnaire containing both Likert-style and open-ended questions was sent to a group of students at a university in Bulgaria. Data were analyzed both quantitatively and qualitatively. Half of the respondents reported that their taking class was impacted, while almost a fourth of them reported complete dissatisfaction with online classes, complaining about low efficiency, tediousness, and decreased motivation. In addition to physical and mental health impacts, more than half of the respondents reported worrying about the future. Some respondents couldn't compensate for the lost income and had to return to their hometowns. These findings imply the need to provide support to students not only to improve the academic quality of classes but also in the economical and mental health aspects.

Keywords: Bulgaria, Online Class, Pandemic, Impact, Satisfaction

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Introduction

Bulgaria is one of the most impacted by COVID-19 countries in the world in terms of life expectancy decline (Kuehn, 2022), the high mortality rate (Ziakas et al., 2022), low vaccination coverage (Mitev & Nanov, 2022), and mental health decline (Lüdecke & von dem Knesebeck, 2022). Together with the above, the higher education sector of Bulgaria has also undergone changes during the transition process to online learning. These changes affected the teaching-learning and communication process between teachers and students (Filipova & Yuleva-Chuchulayna, 2022). Prolonged exposure to the internet and e-learning environment may decrease life satisfaction among Bulgarian students (Garvanova, 2022).

Since the beginning of 2020, university students in Bulgaria are exposed to the impacts of the COVID-19 pandemic. Until early 2022, Bulgarian university students already have experienced five epidemic waves of COVID-19 (Figure 1). Since the first wave, certain anti-epidemic measures were introduced in campus classes that had to change to online. After two years into the pandemic, the online class has become a new normal standard of campus life. However, a study in Bulgaria reported that 80% of respondents expressed dissatisfaction with online classes and thought that this would have negative effects on their education (Avramova et al., 2021)
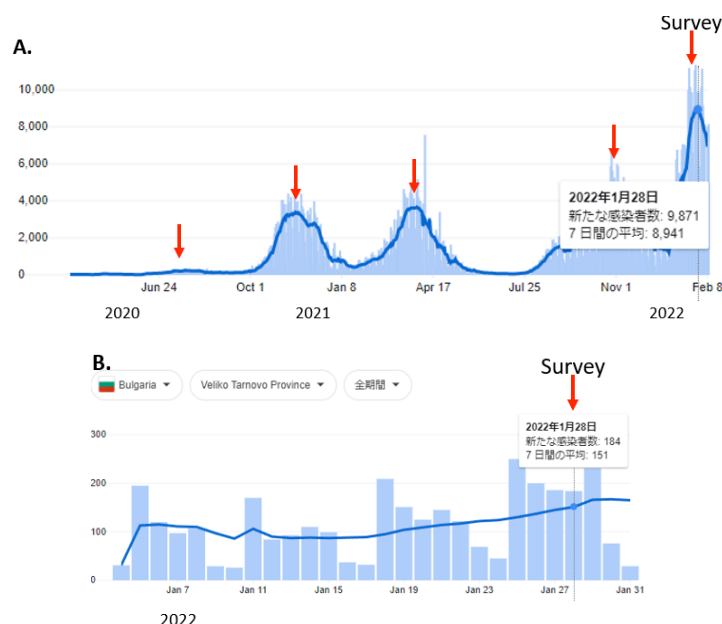
Figure 1: Pandemic waves in Bulgaria (A) and Veliko Tarnovo city (B)
(Source: author adapted from JHU CSSE COVID-19 data)

Veliko Tarnovo University (VTU) is one of the major national universities in Bulgaria. Like other universities in Bulgaria, VTU must face the same challenges during the pandemic such as online classes, digital transformation, social distancing, and lockdown. However, little is known about the impacts of COVID-19 exposure on the academic and daily life of students at VTU and what is the students' satisfaction rate with online classes, and what are the need to be supported.

This paper aims to show: (1) the impacts of the pandemic on the academic and daily life of students; (2) the satisfaction level and attitude of students toward online classes; and (3) factors that may influence the impacts of the pandemic and students' acceptance of online learning.

Method

A cross-sectional survey was designed using an online questionnaire using Google forms. The questionnaire included 4 level Likert-like questions for quantitative analysis and open-ended questions for qualitative analysis. The questionnaire was adapted from the questionnaire used in a previous study (Tran, 2022). Participants were recruited during January 2022 by the direct announcement to several classes of undergraduate students. Participants could choose to exit or join the survey by clicking on the link provided. Participation information was fully anonymous, as no data to identify the person were recorded. We made an analysis quantitatively and qualitatively of the data obtained. Quantitative data were analyzed by SPSS Statistics version 27.0 for Windows (IBM Corp., Armonk, NY, USA). Qualitative data were analyzed by content analysis.

Results

Characteristics of respondents
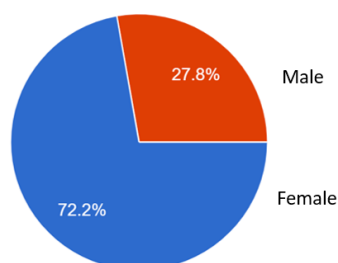
Figure 2: Gender of the respondents

Since the onset of the pandemic in 2020, the number of students available on campus had become slightly decreased. Since online classes had become the norm, a portion of students left for their hometowns while attending classes online. This survey was taken place about two years since the pandemic had been announced. Over two-thirds of the respondents were female (N=18) of the total number of students (Figure 2).
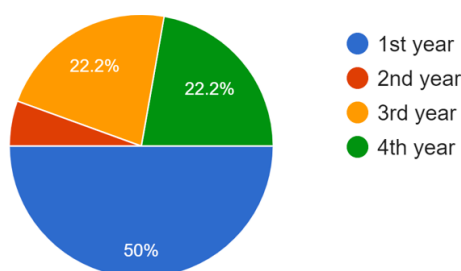
Figure 3: Academic year

Looking at the characteristics of respondents (Figure 3), while all of whom were enrolled as undergraduate students, half of them were in their first year. Taken together the first and the second-year students, over half of the respondents were experiencing their academic life fully under the COVID-19 pandemic, which also means that they had not experienced any academic life before the pandemic. The types of respondents also infer their common daily activities. Undergraduate students are the students who enrolled in a four-year bachelor's course, spending most of the time attending the lecture or practice sessions under the supervision of faculty staff.
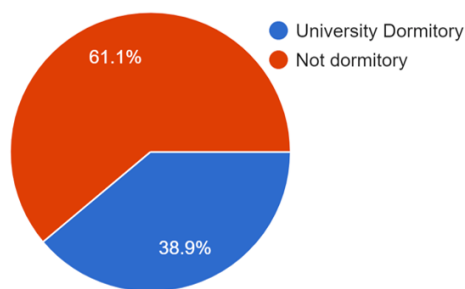
Figure 4. Living in dormitory

As shown in Figure 4, almost two-thirds of the total number of respondents had not been staying in the university dormitory. As reported, during the pandemic some of them left the dormitory for their hometown while keeping study online.
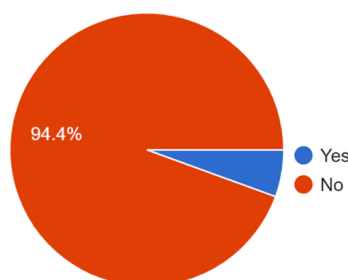
Figure 5: International student

Referring to the international student status (Figure 5), most of the respondents except one were domestic students.
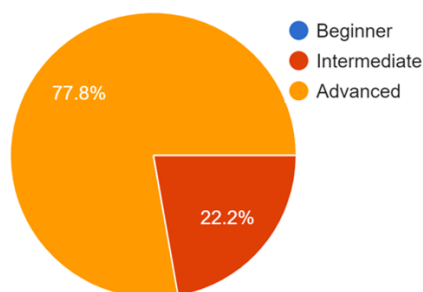
Figure 6: Self-reported English proficiency

For verifying questionnaire comprehension, respondents chose their corresponding level. Over two-thirds of them were at the advanced level and none were at the beginner level, which means that overall English proficiency was satisfied (Figure 6).

Perceived pandemic impacts and satisfaction with taking the class online

The perceived impacts of pandemics on certain aspects of students' life are described in Table 1. The four-level scale ranged from not at all, not so much, some, and a lot. We investigated the seven items of perceived impact as listed in Table 1. To ensure the reliability of this seven-item scale, we calculated the Cronbach's Alpha value was 0.794, which indicated a good internal consistency.

For categories of taking class, doing research, food, grocery supply, or health, the 'not at all' level of impact was chosen by the highest number of respondents. However, for taking class,

a third of respondents replied with 'a lot impacted'. This phenomenon is interesting since the impacts tend to strongly polarize between no impact at all to a lot of impacts. The respondents reported no impact on research, as most of the respondents chose 'not at all' or 'not so much', which could be explained by the fact that undergraduate students are not yet required to do research work (Table 1).

Table 1. Perceived impacts

	Perceived Impact	Not at all		Not so much		Yes, some		Yes, a lot	
		N	%	N	%	N	%	N	%
1	Class	7	38.9	2	11.1	3	16.7	6	33.3
2	Research	11	6.1	4	22.2	3	16.7	0	0
3	Foods	10	55.6	6	33.3	2	11.1	0	0
4	Life	5	27.8	6	33.3	4	22.2	3	16.7
5	Health	6	33.3	4	22.2	4	22.2	4	22.2
6	Stress	3	16.7	7	38.9	4	22.2	4	22.2
7	Worry	1	5.6	5	27.8	2	11.1	10	55.6

Figure 7 shows the results of online satisfaction perceived by respondents. We found that over half of the total respondents had shown satisfaction, including 16.7% of respondents had shown "moderate satisfaction" and 38.9% of respondents had shown "a lot of satisfaction". On the other hand, 22.2% of graduate students had shown "no satisfaction at all" and the same portion had shown "not so much" satisfaction. There was a moderate correlation between satisfaction mean scores of lower years students (first- and second-year students) and higher years students (Spearman correlation test, Rs=0.568, p<0.05), where senior students tend to perceive higher online satisfaction.
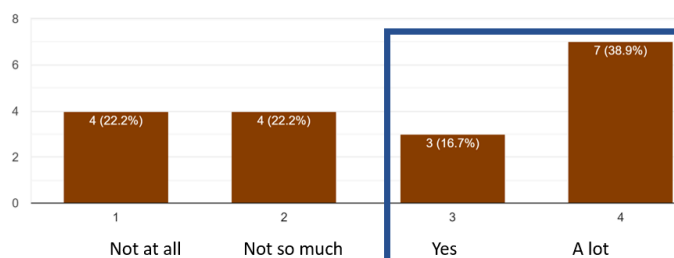
Figure 7. Satisfaction with taking the class online

In response to the question of what proportion of online classes could be acceptable for the future after the pandemic, Figure 8 shows the answers of respondents in which a third preferred full face-to-face classes, nearly a third preferred 20% online classes, while another third preferred full online class. It is interesting that the preference tent to go to extremities rather than a hybrid solution.
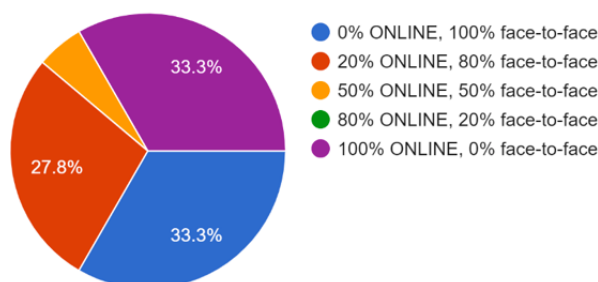
Figure 8. The preferred proportion of online class

Figure 9 shows the percentages of access to pandemic-related information as perceived by respondents. We found that about two-thirds of the total respondents showed "have enough access to information", including 50% of respondents had shown "moderately well informed" and 16.7% of respondents had shown "very well informed".
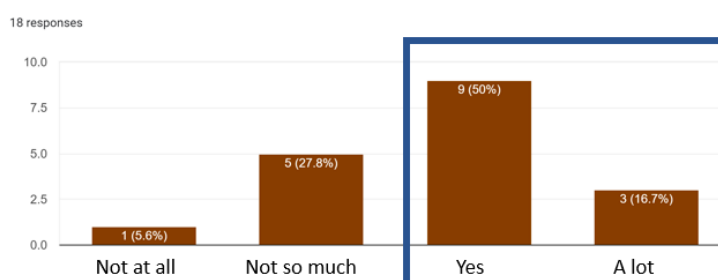
Figure 9. Self-evaluated access to pandemic related information

In Figure 10, respondents self-reported their income change during the pandemic period, which tended to be unchanged or decreased. From the qualitative data, we found that some respondents reported losing their part-time job. From correlation analysis, we did not find any significant association between income change and other variables.
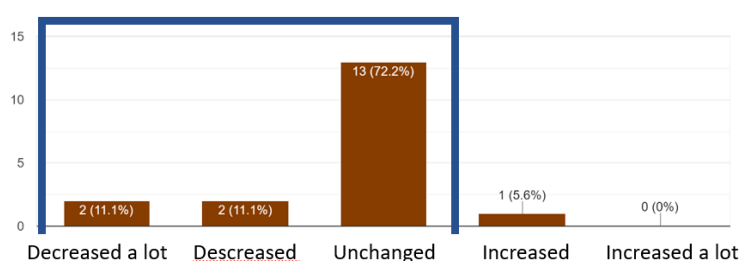
Figure 10. Self-reported income change

We investigated the correlation of independent variables including gender, years of enrollment (1-4), foreign student, English proficiency (beginner, intermediate and advanced), co-living with family members (no and yes), living in a dormitory (no and yes), and self-perceived dependent variables in four-level scale including perceived impact on taking classes, perceived satisfaction of online class, perceived impact on doing research, and perceived access to information. The results of the Spearman correlation test are shown in Table 2.

Table 2. Correlation between independent and dependent variables

		English proficiency	Living place	Life/career plan change	Access information
Taking classes	Rs	.475*	0.139	0.412	0.124
	p (2-tailed)	0.046	0.583	0.089	0.625
Meals and shopping	Rs	0.463	-.493*	0.234	-0.030
	p (2-tailed)	0.053	0.037	0.351	0.905
Health	Rs	0.373	0.318	.512*	0.012
	p (2-tailed)	0.127	0.198	0.030	0.964
Stress	Rs	0.269	0.161	.469*	-.500*
	p (2-tailed)	0.281	0.525	0.049	0.035
Worry	Rs	.716**	-0.073	.710**	0.151
	p (2-tailed)	0.001	0.773	0.001	0.551

It was found several significant associations among variables. Students with higher English proficiency tend to perceive more impact on taking the class ($p<0.05$). Students who live in dormitory tend to perceive less impact on food supply and shopping ($p<0.05$). Students who have more changes in life plans tend to perceive more impact on health ($p<0.05$). Students who have more changes in life plans and students who receive less access to information tend to perceive more stress ($p<0.05$). Students with higher English proficiency and with more changes in life plans tend to have more worry about the future ($p<0.01$). We did not find significant associations with other variables, namely gender, living alone, international student, and years of enrollment.

Table 3. Correlation between dependent variables

		Meals, shopping	Daily life	Health	Online Satisfaction	Income change
Taking classes	Rs	-0.176	.548[*]	0.410	-.557[*]	0.185
	p (2-tailed)	0.485	0.019	0.091	0.016	0.461
Daily life	Rs	0.265	1.000	.600[**]	-0.247	0.181
	p (2-tailed)	0.289		0.009	0.324	0.472
Stress	Rs	0.339	-0.034	0.296	0.040	0.003
	p (2-tailed)	0.169	0.893	0.234	0.873	0.991
Worries	Rs	.619[**]	0.467	.616[**]	-0.285	-0.229
	p (2-tailed)	0.006	0.051	0.007	0.251	0.360

Table 3 shows the results of the Spearman correlation test between dependent variables. We found that students who perceive more impact on taking class tend to perceive more impact on daily life and less satisfaction with online classes ($p<0.05$). There is also an association between the perceived impact on daily life and the perceived impact on health ($p<0.01$). Students who perceived more worries tend to perceive more impact on having meals and on health ($p<0.01$).

Qualitative findings on the impacts of the pandemic

The respondents were asked to explain how their taking classes had been affected by the pandemic. There are some positive responses such as *"I'm completely satisfied with online classes", "It's much more comfortable to be online", "I sometimes enjoy the new and innovative ways some professors make lectures more interesting", and "classes weren't affected as they became online", "I'm already ok with that, it's not a problem", "I am very satisfied with online classes, with the only exception being lacking human contact and creating sustainable relations".*

However, there were more negative voices coming from students such as *"I find online lessons less effective", "In online classes we could not learn efficiently", "I feel like this online won't end soon, which is sad", "They became overwhelming, and I caught myself struggling to finish my homework's by the deadline".* The dissatisfaction expressed by students seemed not only caused by the online-only learning environment but also came from decreased motivation of students. As such, many respondents mentioned limited

communication with teachers or other students during online sessions, lack of concentration, and monotonous way of learning. We heard voices such as *"my motivation decreased dramatically. Online lessons have taken away the frankness and immediacy of lessons and consequently some of the fun. Essentially, I feel like I am repeating my high school senior year. Despite the excitement, I get from learning more about what I am passionate about I think the essence of it has subsided due to online classes. The full university experience has been buried behind colored screens and faceless voices."*, *"Because face-to-face lessons are much more pleasant and have a good impact on the education that we receive. Online classes influenced our relationships with the professors and even the relations between the students"*, *"I find it difficult to concentrate while working online, as a result, I'm left with many gaps in my knowledge"*. There are also issues with an internet connection: *"We can't focus and there are always issues with connection"*, *"A lot of technical problems seem to arise and sometimes they are hard to be solved"*.

The respondents were asked to describe how their daily life had been affected by the pandemic. The negative and sad mood was *"Because my classes had been made online, it was not reasonable for me to stay in campus anymore and I returned to my hometown"*, *"I don't go out that much when I'm in my hometown, so right now it's kind of like the summer vacation. However, I went out a lot with friends while in campus and I even loved going to classes together, which is something we can't do anymore..."*, *"I lost my side job at a restaurant I very much liked"*, *"I don't live at the dormitory at the moment because I can't afford and I need to help my family at home"*, *"I became more distant with people around me, something that saddens and stresses me out. Building new relationships in university seems barely possible anymore. Embarrassingly enough sometimes I even fail to recall my colleagues' faces. Since I have only interacted with them face to face for around a month, bumping onto them by chance after a while, I can't help but notice how many faces I have forgotten"*, *"My daily life still is affected because all I do every day is wake up, sit in front of my computer, studying all day online (sometimes even all night) and then go to bed. And this is my routine for more than 2 years, with the exception: of when we had face-to-face classes for less than a month. I do not think this is normal for young people to spend so much time in front of computer screens. This is an even more unhealthy "solution" to the COVID-19 restrictions!"*, *"Forced to sit at home for online classes, low physical activity. Low motivation and drive."*

The respondents also were asked to explain how their health had been affected by the pandemic. Some of the respondents reported being contracted by saying that *"I had COVID-19, my family had it, and most of my friends have also had it by now"*. Some others expressed loneliness such as *"Yes, my health got affected. I no longer go out with my classmates even if it is just for a walk or to the university"*.

Regarding the question about changes in life and worries about the future, some respondents reported that *"I am worried that this new lifestyle is going to be the beginning of the futuristic lifestyle of everyone and honestly it makes me sad to think everything is going to be online (classes, exams, etc.) and from home (job, shopping, etc.)"*. Some others described a frustration: *"Yes, my life changed. I was not ready to be sitting on a chair for more than 2 years. These should have been my best years in university, to make new and lifelong friendships, studying at the last minute for an exam, feeling many kinds of new emotions, etc., and instead of this, all I feel is back pain, anxiety, stress, and anger whenever I start doing my university duties, isolated from everyone and everything. This is depressing!"*. Some others worried about continuing education as *"I'm not sure I will have enough money to*

continue my education". Some respondents do not prefer to continue if the next course also will be online: "*I was thinking about taking up a master's degree next year, but one of the reasons I'm leaning more towards not doing it now is because I don't want it to be online classes again"*. Some respondents expressed suspicion about the qualification they got by online education such as "*Due to the low quality of classes I will most likely not be able to work in my field"*. The respondents also specified the need for support that they may expect. Many mentioned the need of financial support and mental health support.

Conclusion

In this paper, the authors investigated the impacts of the pandemic on students' taking classes as well as other aspects of students' life. It had been conducted two years into the pandemic in Bulgaria when the students already had experienced four epidemic waves from 2020 through early 2022, while the fifth wave was still at its peak (Sofia News, 2022). During these two years, the students at the target university studied fully online except for about a month period when the campus was open temporarily for classes. More than half of the respondents were in their first and second year and have never experienced before-pandemic university student life. From the quantitative data analysis, the results showed about a half of students perceived an impact on taking class, and online class preference showed the extreme tendency of fully online or full face-to-face class rather than having a hybrid class. Almost a fourth of the respondents reported complete dissatisfaction with online classes, complaining about low efficiency, tediousness, and decreased motivation. In addition to physical and mental health impacts, more than half of the respondents reported worrying about the future. Some respondents could not compensate for the lost income and had to return to their hometowns.

The respondents had not felt short of information. Students who live in dormitory tend to perceive less impact on food supply. Students who have more changes in life plans tend to perceive more impact on health and perceive more stress. Students who perceive more impact on taking class tend to perceive more impact on daily life and less satisfaction with online classes. Students who perceive more impact on daily life also perceived impact on health. Students who perceived more worries tend to perceive more impact on having meals and on health. From the qualitative data, we found that some students prefer online classes, but more students showed reluctance toward online learning, associating it with boredom, lack of communication, low motivation, and inflexible teaching practice.

These findings imply the need to provide support to students not only to improve the academic quality of classes but also in the economical aspects such as providing tuition reduction, scholarships, and free COVID-19 testing. There is a need for providing mental health support to students. Nevertheless, improving the quality of online class by enhancing the communication efforts of the faculty staff also need to be put under consideration. These findings also demonstrated the need for further investigation on the future form of online learning, the factors that may predict the impact of pandemics on students, and the role of supportive factors in alleviating the impacts of the pandemic.

References

Avramova, N., Mihaylova, I., Yaneva-Ribagina, K., Bonev, B., & Nenov, S. (2021). Dental Students' Perspectives on the Implementation and Effectiveness of Online Learning Due to COVID-19 Pandemic: A Descriptive Cross-Sectional Study in Bulgaria. *Advanced Education*, *18*, 109–118. https://eric.ed.gov/?id=EJ1316092

Filipova, M., & Yuleva-Chuchulayna, R. (2022). Problems in Digital Learning for Higher Education Teachers. *Strategies for Policy in Science and Education*, *30*(1), 9–31.

Garvanova, M. (2022). Relationship Between Internet Addiction and Life Satisfaction Among Students in the Conditions of Covid-19. *INTED2022 Proceedings*, *1*(March), 5227–5231. https://doi.org/10.21125/inted.2022.1360

Kuehn, B. M. (2022). COVID-19 Cuts Life Expectancy in Dozens of Countries. *JAMA*, *327*(3), 209. https://doi.org/10.1001/jama.2021.24595

Lüdecke, D., & von dem Knesebeck, O. (2022). The decline in Mental Health at the Beginning of the COVID-19 Outbreak Among European Older Adults—Associations With Social Factors, Infection Rates, and Government Response. *Frontiers in Public Health*, *10*(March), 1–10. https://doi.org/10.3389/fpubh.2022.844560

Mitev, T., & Nanov, P. (2022). Why Do Bulgarians Resist the COVID-19 Vaccination? Reflections on an Outlier. *SSRN*, *preprint*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3990526

Sofia News. (2022). *Bulgarian Professor: Next Week We will Reach the Peak of the Fifth Covid Wave*. https://www.novinite.com/articles/213535/Bulgarian+Professor%3A+Next+Week+We+will+Reach+the+Peak+of+the+Fifth+Covid+Wave

Tran, H. (2022). International Students' Acceptance of Online Learning During Pandemic: Some Exploratory Findings. *The IAFOR International Conference on Education – Hawaii 2022 Official Conference Proceedings*, 87–96. https://doi.org/10.22492/ISSN.2189-1036.2022.9

Ziakas, P. D., Kourbeti, I. S., & Mylonakis, E. (2022). Comparative Analysis of Mortality From Coronavirus Disease 2019 Across the European Union Countries and the Effects of Vaccine Coverage. *Open Forum Infectious Diseases*, *9*(3). https://doi.org/10.1093/OFID/OFAC006

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21st Century Education Model: We Need Museums Now More Than Ever

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Abstract

The accelerated development of digital technologies highlights the necessary transformation of educational models towards one based on competencies and capable of breaking with linear and deductive thinking. At this juncture, museums are reconsidered and redefined as cultural spaces capable, from artistic practices and new technologies, of breaking with the linearity and rigidity of the scientific method. From the experience of the MUI (Interactive Urban Museum) in Puebla, Mexico, the case of educational innovation is analyzed from a new museology approach. In it, experiential and challenging learning situations are developed for university students who participate in exhibition projects and visual and museographic strategies with social impact. From the exhibitions produced between 2020 and 2021, it is possible to observe and identify a positive change in the domain of skills derived from artistic, museographic practice and visual content creation. It is concluded that this change in the level of mastery is related to the commitment that students develop with the projects, as a high degree of experimentation can develop in the museum.

Keywords: Challenge-Based Learning, Competency-Based Education, New Forms of Content Delivery, Professional Education

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Introduction

The 21st century gathers the complexities that the phenomena, of any kind, present in the future of our species, have been adding over time. The education that we are obliged to manage and build today is marked by the need to train individuals in skills that are capable of understanding and solving the high complexity of global phenomena. The complexity is accompanied by the technological revolutions that we have experienced, thus the change, direction and way in which education must be built from this second half of the 21st century is a consequence of the last of the revolutions, the digital one that through its technologies They warn of training in "new" skills to be able to break with the logical-deductive-traditional thinking, unsuccessful in dealing with global emergencies. A kind of "throw away and leave behind" is embraced as the germ of being in institutions, such as museums and cultural spaces, that are built in the educational field.

In this narrative, museums, one of the oldest institutions we know, are reconsidered, and redefined from the idea that artistic practices and new technologies are the means capable of breaking with the linearity and rigidity of the scientific method. Thinking of these spaces as those that go beyond a university classroom and a training that transitions to inter/trans disciplinarity seems to be a prudent response to the call of our high complexity. University museums play in this last point a fundamental safeguard factor for the experimentation of languages, civil passions, and basic activism that, through artistic practices and from the so-called new museology, potentiate and strengthen in people in training, skills that university educational models seek to develop. These new museum roles have allowed them to be part of the so-called new cultural centers, given that for training in skills, they become meeting places, networks, communities and student and citizen organizations; They carry out collaborative cultural practices based on participation and activism, as an interface between the university and the city, and building spaces for comparison, dialogue and reflection.

From the experience of the MUI (Interactive Urban Museum) in Puebla, a university museum of the Tecnológico de Monterrey, a case of educational innovation is analyzed that develops experiential and challenging learning situations from a new museology for university students who participate in exhibition projects and of visual and museographic strategies of social impact between 2019 and 2021. The purpose of the implementation of this educational innovation was to observe and identify a positive change in the mastery of skills derived from artistic, museographic practice and visual content creation. This change is related to the commitment that students develop with the projects, as a high degree of experimentation can develop in the museum.

The article begins with a referential and theoretical-methodological review and reflection from the new museology, a museological current that places museums as creators of an impactful cultural and artistic practice, to the function of the so-called new cultural centers in a new context of university work in the public space; and where it is located, the participation of 215 students in professional practices and social service in the museum from courses related to visual strategy and creation of new content. Next, significant findings are presented that support the initial assumptions about artistic practices and education in skills from university museums.

**Education in competencies, flexible educational models, and new spaces for learning:
the university museum for challenge-based learning**

The need to define educational models that form professional profiles capable of facing highly complex global challenges reveals the crisis of the current university system and in it the urgency of reconnecting universities with public spaces so that their impact and incidence permeate not only in student training but also in the regeneration of urban space. With this, one more university mission to be fulfilled is defined. This is how the concept of competence and the need to train them professionally (Getting Smart, 2018) acquires priority.

The model that accompanies this educational construction places students in challenging and experiential experiences and outlines them as the designers of their learning under a logic of flexibility and adaptability in coherence with exponential technology in a way that overcomes technical barriers and promotes their own design challenge. Challenging and experiential situations from this learning logic take on meaning and opportunity (Malmqvist, Rådberg and Lundqvist, 2015) to be developed by students in spaces outside the classroom, whose ecosystems foster the formation of skills and competencies specific to the disciplines and transversal to them, so that they produce innovative learning and high social impact.

In the same way that university education begins its crisis, the economic system has exacerbated a global crisis since 2009 and that, experienced first in many European countries, opened the door to reflection and understanding of the function and role that institutions and cultural centers had in the articulation of more collaborative practices, pointed out by Sachs (2006) as the viable path, and based on participation and activism, whether in the cities and in the countryside, as well as in the so-called South as in the north. These new cultural centers, according to Niessen (2019), were built as spaces for comparison and crucial safeguards for the experimentation of new languages, civil passions, and civic participation. In addition to being crossed by hundreds of thousands of people. Thus, they constitute an unprecedented opportunity for the creation, such as experimental libraries, of regenerated places or community centers and artists' residences. They are configured as a world that we still need to know, study and tell more about.

The complexity that we denote in the intersection of the university and economic crisis is the gateway to focus attention from two areas in the university museum. The first in its ability to develop the practices that characterize the new cultural centers. From an ontological conception and following the Educational Innovation Observatory (2016), the museum can be known as a physical space and can become one in which the dynamics of approaching situations appeals to experiences where students actively participate in open learning experiences. The latter, challenging and experiential, focuses on the fact that experiences of social and cultural innovation, Niessen (2019) points out, begin with the combined action of practices from below, promoted by universities and other public institutions, with the innovation of traditional cooperative networks and attempts to renew spaces. University museums can become these spaces to set up the most suitable interfaces for collaboration and co-creation between university communities with the city and its actors.

The second area of attention is pointed out from the temporal concurrence of the educational and cultural and it is prosecuted with the development of an increasingly critical current in the work of museums narrated as a new museology (EVE, 2016). In this way, it is possible to understand that approaches such as critical didactic museography and Challenge-Based Learning (ABR), appeal to the design of experiences where students learn when they actively

participate in open experiences (Tecnológico de Monterrey, 2018). such as the development of experiences with visual strategies for exhibitions from didactic museography.

Within the new museography (Aranzazu-López, et. al. 2018), didactic museography constitutes, transversally and disciplinarily, a pedagogical tool that fosters the construction of competencies in visual strategy for the creation of new content. The derivative of this, are the narrative environments designed to generate experiences linked to a response mediated by the contributions of design and engineering, determined from the public and for the public, and that respond to the problem of the quality of immersion in the experience. of the visiting public of today's museums.

Museography, from this perspective (Aranzazu-López, et. al. 2018), is where it is possible to build immersive experiences, essential for the competency-based model, by materializing narratives in complete exhibitions and allowing interaction with them. Under this premise, we understand that the university museum becomes a space for research and creation for knowledge, in which design, arts and engineering converge as drivers of skills, and where academic expression engages in communicative developments.

At this juncture we can remember and reaffirm art as a way of thinking (Amador 2009; Niessen, 2019), of extreme thought, which becomes visible in everyday life, in any individual, which produces innovative languages through innovative forms. and disparate practices and capable of activating processes of cohesion and social inclusion in the territories by turning them into poles of attraction for innovative languages. Art, Minski, 2020 reminds us, is effective at looking at multiple possibilities and issues from a holistic perspective, which, together with design as its direction, creates a solution to shape a service or product (Figure 1).
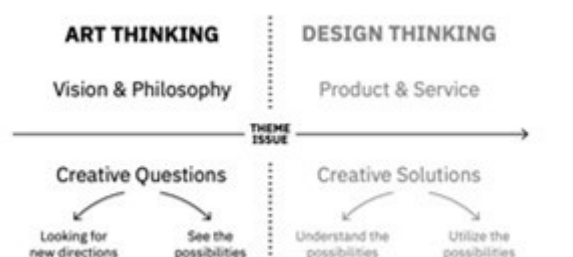
Figure 1 Art is a compass by Minski, (2020).

Through this crucible that we have just explained, museum spaces (ICOM, 2019) are understood as true art and science laboratories, which, enabled by technology, build platforms that allow all their audiences, culturally heterogeneous and hybrid, to co-create, share and interact to solve common complexities. They do so through the development of museography skills in students of disciplines framed within the studies of creative industries (Buitrago and Duque, 2013), and transversally related to artistic thought and communication in new codes; from experiential and challenging situations whose didactics provoke learning and socially significant impacts.

Educational innovation in the MUI: art as a way of thinking and a method of learning by competencies.

The methodological framework of our research is located within the educational innovation project "Learning based on challenges in the Tecnológico de Monterrey Museum", which was developed by the MUI Interactive Urban Museum between the second semester of 2019 and the first in 2021 with students interns and in social service who were studying general education and disciplinary academic programs in the creative studies area of the Tecnológico de Monterrey at its Puebla campus. According to the MUI, this is a university museum located in the center of the city of Puebla in Mexico, managed by the Tecnológico de Monterrey, a private university in Mexico whose educational model, known as Tec21, is based on competency-based training (Technology of Monterrey, 2016).

From a qualitative approach from the experimental design of this educational innovation project, it was structured and delineated from the identification and analysis of previous studies related to education by artistic-creative didactics and competencies (Traverso-Ribón et al., 2016; Fonseca Escudero et al., 2016) concluding in the use of a transdisciplinary approach of intersection of artistic and scientific practices called Art Thiking (Minski, 2020). From this approach it is conceived that art and artistic thought are the optimal way to understand the problems (social, economic, political or technological) and the most complex systems that we have created as humanity. Under this epistemological assumption, "art has the power to scrutinize existing beliefs, cast doubt on common perceptions, and find a way to think outside the box" (Minski, 2020).

In this educational innovation project, Art Thinking is approached as experimentation in and for the design of exhibitions with new museography. In this way, methodologically, experimentation was built with challenging and experiential situations whose pedagogical objective was to determine the impact on the level of skills and abilities in museography for the design of immersive experiences of students enrolled in courses related to visual strategy and who participated in the creation of content for the design of the exhibitions Collaborative People, COVID Residence and The World in the Cloud scheduled for the 2020 and 2021 exhibition cycle (MUI, 2021). The output variable that the design of the didactic situations of the experimentation sought to measure was the change in the level of skills and abilities of the participating students. In particular, the level of four disciplinary competencies in new museography and two transversal ones, defined in 10 and 2 subcompetencies, respectively (Table 1) for the same project from the documentary research carried out and those declared by the Tec21 model (Tecnológico de Monterrey, 2019).

It is important to highlight the methodological basis of the experimental procedure carried out. Which given the change in formats of interaction with students that was caused by the global health contingency and the prevailing need to evolve towards digital exhibition experiences, the design of learning activities that should obtain products / ideas or plans for format of digital exhibition took into consideration the experiences systematized in *The Routledge Handbook of Museums, Media and Communication.* by Kirsten Drotner, Vince Dziekan, Ross Parry, & Kim Christian Schrøder. (2019).

Competences		Subcompetences
Disciplinary in Museography	Visual Strategy	Formulates design strategies through tactical plans and considering the necessary resources available.
		Implements action plans on the general design strategy, covering the complementary projects that are extracted from it.
		Designs exhibition products that generate static, dynamic, interactive and immersive visual experiences using analog and digital resources.
		Develops visual narratives based on principles of semiotics and fundamentals of design.
		Uses the technological resources of digital design in the development of the visual design proposal.
	New Content Creation	Analyzes the socio-historical, cultural and arts context, identifying their interrelationships in the creation of creative proposals.
		Analyzes content and narrative using textual theories and methodologies.
		Creates content and narratives in different formats using relevant languages and technologies, and managing resources efficiently and sustainably.
		interprets the conceptual, virtual and physical environment as a basis for his representation proposals.
Transversal	Understanding other codes	Identifies appropriate analog and digital technologies in the design of creative projects.
		Generates communicative discourses in which it uses various codes (visual, sound, architectural, spatial, graphic, etc.) that take into account geopolitical and sociocultural contexts
	Systemic thinking	Analyzes problems with an integrated vision from inter and transdisciplinarity, conceiving reality as a set of interconnected systems.

Chart 1 Disciplinary and transversal competences measured. Own elaboration based on documentary research and declared by the Tec21 Model (2019)

For each of the disciplinary sub-competences, mastery levels and success criteria were built at the discretion of each exhibition project based on approaches on critical museography and new museography, as well as from the Tec21 competency-based education model. of success based on the reflections and conceptual definitions of Aranzazu-López, et al. (2018) on interactive museographic narratives, experimental art, and museology and experimental museography by Aranzazu-López, et. to the. (2018), Minsky (2020); Forero Parra (2014) and Achiam, Haldrup, & Drotner (2021); in dialogue with the analytical plans designed by the Tecnológico de Monterrey for its entry of creative studies (Tecnológico de Monterrey, 2020). Similarly, for the measurement of the transversal ones, the evaluation criteria tables (Tecnológico de Monterrey, 2019) were used for said competencies in relation to systemic thinking and the understanding of other codes. Finally, for the validation of the comparison proposed in the measurement of the level of competences, the degree of mediation[1] that the museum exhibition produces is considered as a success criterion.

The didactic situations of the experimentation were designed throughout three moments corresponding to the planning of the scheduled exhibitions and in the practical-theoretical framework of Art thinking (inspiration, envision and prototype), and the MUI artistic residency model. At first, within six courses declared in the entry of creative studies (Appendix A) of general education, exploration of area, discipline and disciplinary block of the professional training of the Tecnológico de Monterrey campus Puebla, and three Tec weeks of student training (LiFe), 155 registered students are immersed in a museological

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[1] Museum mediation understood as the resulting experience of teaching produced by museographic narratives and is measured in relation to its [1] possibility of reciprocal communication, [2] the expansion of content and [3] the inclusion of various audiences (Aranzazu-López, C.U. et al., 2018).

program that consists of inspiring tours, talks, workshops, prototypes and actions by resident artists and expert-academicians invited by the museum within the exhibition program.

A second phase consisted of the participation in the curatorial research process, and museographic design and production of 85 students from the courses of the first phase and currently enrolled in professional internships and social service at the MUI for a semester. In this second phase, an initial evaluation was made through participant observation records, project portfolios and focus groups, according to the competencies that should be evaluated or the activity in which the student was involved in the creation process. and design of exhibitions and products derived from them. This made it possible to determine the level of competences in museography and the transversal ones related to the design of narrative environments with immersive experiences for those beginning in August 2020 and concluding in June 2021.

The measurement instruments used (checklists and rubrics) were designed from the reflexive intersection of the new museography (Niessen, 2019; Aranzazu-López, et. al. 2018), the approach of artistic and creative thinking (Minski, K., 2020) and the map of training in skills in creative studies (Tecnológico de Monterrey, 2019; 2020). The instruments measure and evaluate performance in open learning activities that seek to trigger creative and design thinking to build experiences with visual exhibition strategies (Appendix B).

The data collection for the measurement after the experimentation is carried out several times throughout the two semesters. The data collection happens during the formative experience of the learning activities designed within the five phases that are generally considered in the process of creation and exhibition design (Kamaruddin, 2019): initial, conceptual, design, production, launch.

In a last third moment, the exhibition project developed by the museum is evaluated in its museographic component, through content analysis and because of collective intelligence with the participating students. Together with unstructured interviews, the level reached in them of the disciplinary and transversal competences declared in the experimental design is determined. The contrast between the first evaluation and the last one made it possible to identify the change in the level of competencies studied. Similarly, the content analysis of the museographic scripts designed for each exhibition allows validating the results of the comparison.

The informed consent of the students participating in the experimentation is obtained by signing the letters of social service and professional practices. As well as the recording of the sessions from the Zoom streaming platform, derived from the change in the class format due to the COVID 19 health contingency.

Finally, the development of the project and its experimentation were involved in approximately 90% of the context caused by the health crisis caused by the COVID-19 pandemic. Thus, it was developed in a digital context, being only the pilot test in face-to-face format during the month of November 2019. Despite this radical change, the learning became more interesting, reflecting these in the summary of results.

Conclusions

Summary of results

The experimentation of the innovation proposed from the project developed at the MUI was implemented with Professional level students in 9 groups and impacted 215 students. The proposed educational innovation sought, in the words of teachers and collaborators (interpersonal communication, 2021):

> Build new forms of content creation for the design of exhibitions in the museum from challenging situations. [Thus] students can develop disciplinary and transversal skills in non-formal education spaces, causing impacts in the work with the community; they explore and participate in museological work reviewing disciplinary content through various formats to design visual and learning experiences in the exhibitions.

The implementation of this educational innovation was accompanied by an experiment that measured its impact on a battery of 12 conceptualized variables, operationally, in relation to the performance levels defined for the Tecnológico de Monterrey. For the measurement of the experimentation of each of them, it was carried out with a control group and the data obtained reached an Inferential level of analysis. Thus, according to the shared evidence, it is possible to conclude that all the variables showed a significant positive impact.

The measurement and its analysis made in the experimentation of the educational innovation of this project allows us to conclude how the museum approached as a space for experimentation and research based on artistic thought, is a space catalyst for the formation of professional skills of students who enter the creative studies area of the Tecnológico de Monterrey on the Puebla campus, without significantly differentiating the semester they are studying. The results of the initial and final evaluations carried out on the 85 participating students enrolled in the MUI professional internship and social service program reflect that, in general, approximately 80% of the students show a change in the level of mastery of the disciplinary and transversal competences. An improvement and change in the level of mastery (level A, B or C) of the two transversal competences and their sub competencies in 85% of the students are highlighted, while this change in the level of mastery of the disciplinary ones is observed in 75% of the participating students (Appendix C).

In the same way, the content analysis carried out on the exhibitions designed and produced as part of this educational innovation project reflects a high degree of medication of the three exhibitions integrated into the experimentation, thus highlighting that the experience resulting from the teaching produced Due to the design of the museographic narratives, it allows reciprocal communication between the audiences and the exhibition, expands the contents of said narratives to other forms of reality, digital for example, and finally causes the inclusion of a greater diversity of audiences. As a validation strategy, the comparison between the initial and final mastery level within a ratio of participating students from 10 to 8.

New insights to future

The results obtained prove the functionality and strategic role that university museums can have as new cultural centers in competency-based education, where disruptive, hybrid methods and promoters of transdisciplinary thinking between art and science produced from approaches such as the new museography They represent a comprehensive training based on

collaboration as collective intelligence capable of producing innovative solutions to highly complex challenges.

A significant discovery for the understanding of the factors in the construction and development of students' competences consisted in understanding that the model of the 3Cs (collaboration, coordination, and cooperation) of the experimental art of Minski has a direct relationship in the scope at the domain level undifferentiated by the semester the student is studying. It is assumed because of this observation that the collective intelligence generated because of the synergy of the same didactic situation can allow the early development of disciplinary competences in those students of the first years of the area of creative studies.

Appendices

A.   Courses enrolled at MUI Project

Semester	Course's Name	Course	Key	Enrolled Students	Campus
Agosto - Diciembre 2019	Cultura de la imagen	Materia	29075	28	Puebla
Agosto - Diciembre 2019	Cultura de la imagen	Materia	29074	24	Puebla
Agosto - Diciembre 2019	Diseño centrado en el usuario	Materia	18831	25	Puebla
Agosto - Diciembre 2019	Diseño de experiencias II	Materia	18833	7	Puebla
Febrero - Junio 2020	Ergonomía para el diseño	Materia	38122	32	Puebla
Agosto - Diciembre 2020	Estética	Materia	35274	9	Puebla
Agosto - Diciembre 2020	Arte de Emocionarte	Semana Tec	8793	30	Puebla
Agosto - Diciembre 2020	Arte de Emocionarte	Semana Tec	8799	30	Puebla
Agosto - Diciembre 2020	Arte de Emocionarte	Semana Tec	8800	30	Puebla

Chart 2. Enrolled courses at MUI project

B.   Measurement instruments

1.   **Checklists for evaluating the disciplinary competence in interactive museography**, which refers to the domain, mainly of skills and attitudes to create immersive spaces in narrative environments, considering the aesthetic and usability foundations, through multimedia technologies and the study of its correct functioning to compose exhibition objects in environments that encourage experiences.

They Built from the approaches on critical museography and new museography, and the Tec21 competency-based education model. Also, they were validated, tested and modified during the piloting carried out in week i 2019 [PUE-NTALLSV-21537] LuminiEscence: designing the light of the future.

The competencies that support the domain in interactive museography are in Visual Strategy (formulates design strategies through tactical plans and considering the necessary resources available. Designs exhibition products that generate static, dynamic, interactive, and immersive visual experiences using analog and digital resources, based on principles of semiotics and fundamentals of design); and in Creation of new content: (analyzes the socio-historical, cultural and arts context, as well as analyzes and creates content and narratives using textual theories and methodologies in different formats using relevant languages and technologies).

2.   **Rubric and checklist for evaluation of transversal communication sub competencies** in other systemic thinking codes. In relation to the measurement of transversal competences, these two instruments are designed based on the Guidance Document for higher education teachers on transversal competences in the Tec21 model.

To define the criteria, the theoretical, conceptual, and procedural constructs were considered from the didactic and critical museography on the creative and design process in the production of the narrative environments that provoke and induce a level of immersion in the narratives of the exhibition that manages to generate the process of interpretation subject-object.

3.   **Checklist for evaluation of muselogical script proposals with criteria** built from the approaches on critical museography and new museography of: Aranzazu-López, C.U.; Bahamón-Cardona, C. A. and Beltrán Cardona, D. F. (2018). Minski, Kristefan. (2020). Forero Parra, M.A. (2014) and Marianne Achiam, Michael Haldrup, & Kirsten Drotner. (2021).

Rúbrica para evaluación de la propuesta de guiones museológicos Criterios*		Sí	No	pts (18pts)		Sistema de ponderación	
	a) **Planteamiento:** introducción al tema, contextualización, asomo de su importancia para nuestra vida social o natural			0		Sí	1
	b) **Desarrollo:** explicación del tema y despliegue de la trama.					No	0
[1] Núcleo de la exposición: Trama argumental, las historias desde los contenidos temáticos expresados en discursos, en colecciones patrimoniales y en escenografía (ambientaciones, dioramas, gigantografías etc).	c) **Conflicto:** problematización del proceso histórico, social o natural.						
	d) **Pregunta generadora** (explícita o implícita): invita al visitante a cuestionarse sobre el tema central y reflexionar su posición sobre el conflicto planteado.					Nivel de desempeño	Pts
	e) **Cambio de giro:** la exposición presenta un nuevo elemento o suceso que retoma el interés del usuario por la exposición, exteriorizar una nueva perspectiva del problema planteado o vislumbrar a uno nuevo que habrá de desarrollarse en la próxima sala o acto.					Necesita mejorar	<12
[2] línea del tiempo: Ubica cronológicamente con la mayor precisión posible a los visitantes de la exposición.	[1] No tiene que ser lineal y progresiva, puede contener horizontes temporales que se yuxtaponen y complementan a lo largo de su desarrollo.					En desarrollo	13-14
	[2] Debe tener peso visual en la puesta en escena.					Suficiente	15-16
	[3] Tiene que combinar los elementos scripto visuales (texto e imágenes) alternados con objetos / obras referenciales.					Sobresaliente	17-18
[3] línea de profundidad: Recoge todos esos datos, anécdotas, citas y explicaciones detalladas necesarias para profundizar en el tema, pero que no son fundamentales para comprender la trama	[1] Se desenvuelve a lo largo del recorrido expositivo						
	[2] A través de paneles con infografías, módulos interactivos, islotes para consultas, duchas sonoras, multimedias o sencillas cartillas de mano						
TEMA	Enuncia los temas que aborda la exposición. Cada tema deberá aparecer de acuerdo a la secuencia de acto/tema que hemos acordado en la estructura narrativa.						
SUBTEMAS	Enuncia cada uno de los subtemas correspondientes a cada tema y también le asignamos una numeración y código a cada subtema						
CONTENIDOS	Definidos a partir de la idea de la exposición producto de una investigación previa y suficientemente documentados o a partir de la asesoría científica, con la información y la experiencia en el manejo del tema o los temas.						
APOYOS COMUNICACIONALES	Indica cada uno de los apoyos necesarios para transmitir cada contenido, tales como texto de sala, imagen fija, video, grabación sonora, infografía, mapa, interactivo, multimedia etc.						
PREFIGURACIÓN MUSEOGRÁFICA	Señala los estímulos en el visitante, el por qué, y con qué tipo de ambientación, instalación o dispositivo museográfico se encontrará el visitante, posibles emociones, reacciones y conducta esperada.						
COLECCIÓN	Enlista cada uno de los objetos/obras/especímenes que participan en la exposición de acuerdo con cada tema y subtema.						
Presenta una **Unidad Mínima Significativa**	Menciona el desarrollo mínimo del tema a que no pudiéramos descomponer aún más en un espacio tridimensional, sin comprometer su comprensión por parte de los usuarios						
Señala el **islote museográfico**	Hace mención de un conjunto articulado de dispositivos museográfico (paneles, vitrinas, pedestales, bases, etc.) el cual soporta a un subgrupo de objetos/obras/especímenes junto a sus respectivos apoyos comunicacionales compartiendo entre sí una Unidad Mínima Significativa *						

Chart 3. Checklist for evaluation of muselogical script proposals with criteria

C.   Educational impact results (sub competencies analysis synthesized).

For more detailed information, contact the author.

Visual strategy [Disciplinary competence in Museography]
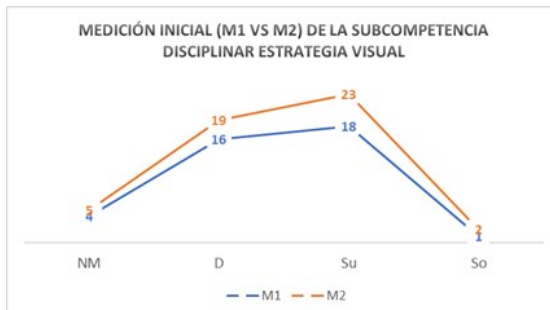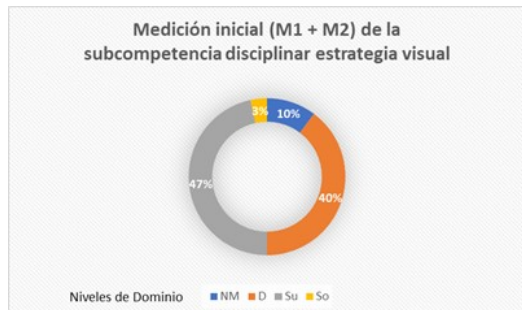
0.   Initial measure
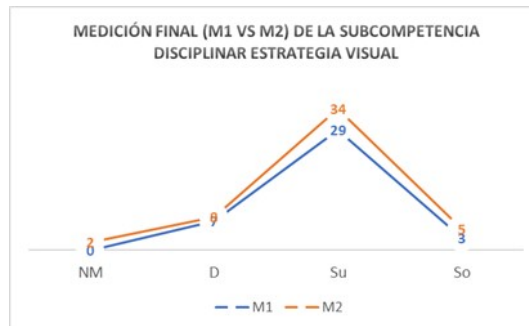
1.   Final measure

Creation of new content [Disciplinary competence in Museography]
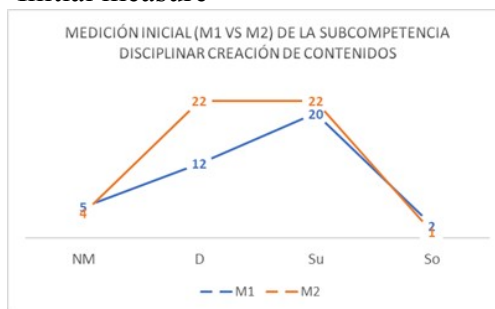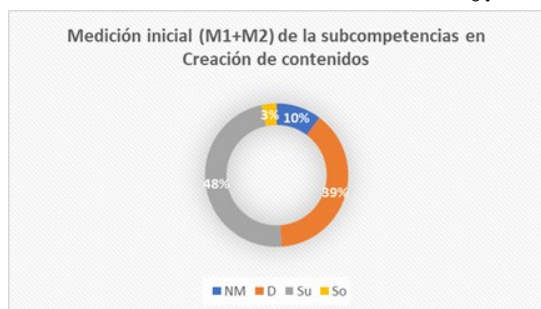
0.   Initial measure
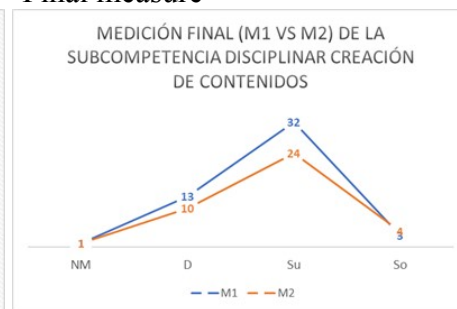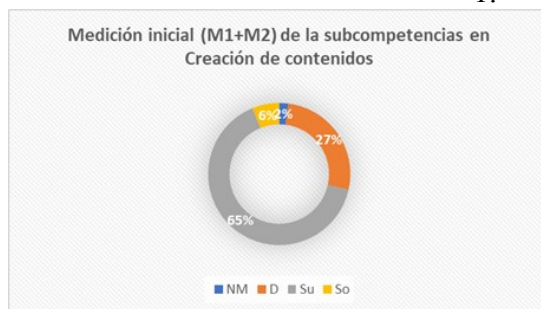
1.   Final measure

Understanding of other codes [Transversal competence]

0. Initial measure

Medición inicial (M1+M2) de la competencias subcomeptencia comunicación

NM D Su

MEDICIÓN INICIAL (M1 VS M2) DE LA SUBCOMPETENCIA TRANSVERSAL COMUNICACIÓN

NM D Su

— M1 — M2

1. Final measure

Medición final (M1+M2) de la subcompetencias en comunicación

NM D Su

MEDICIÓN FINAL (M1 VS M2) DE LA SUBCOMPETENCIA DISCIPLINAR COMUNICACIÓN

NM D Su
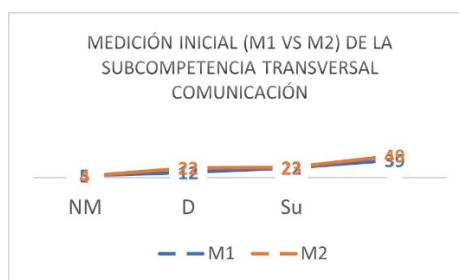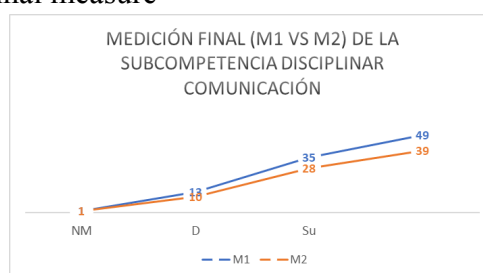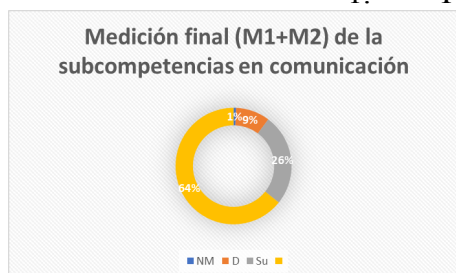
— M1 — M2

Systemic thinking [Transversal competence]

Niveles de dominio

Básico	Intermedio	Avanzado
<36 pts	37-60 pts	61-80 pts

0. Initial measure

Resumen medición inicial			
Nivel de desempeño	M1	M2	To
Básico	15	27	42
Intermedio	12	15	27
Avanzado	8	11	19
	39	49	88

1. Final measure

Resumen final			
Nivel de desempeño	M1	M2	To
Básico	20	24	34
Intermedio	12	12	30
Avanzado	8	10	24
	39	49	88

Acknowledgements

References

Amador, R. (2009). Arte y Ciencia-El arte de Pensar con arte. (pensamiento), (palabra). Y obra, (2). https://doi.org/10.17227/ppo.num2-298

Aranzazu-López, C. U.; Bahamón-Cardona, C. A. y Beltrán Cardona, D. F. (2018). Narrativas museográficas interactivas. trilogía Ciencia Tecnología Sociedad, 10(19), 75-86.

Buitrago Restrepo, F y Duque Márquez, I (2013). The Orange Economy: An Infinite Opportunity. Inter-American Development Bank

EVE (2016). Museos y nueva museología (I). Recuperado el 08 de julio de 2019 de https://evemuseografia.com/2016/07/15/museos-y-nueva-museologia-i/

Fonseca Escudero, D., Redondo Domínguez, E., & Valls, F. (2016). Motivation and academic improvement using augmented reality for 3D architectural visualization. Education in the Knowledge Society, 17 (1), 45-64. doi: http://dx.doi.org/10.14201/eks20161714564

Forero Parra, M. A. (2014). Museum Making: Pensando el quehacer museográfico. Intervención, (10), 94–97. https://doi.org/10.30763/Intervencion.2014.10.127

Getting Smart (2018). Show What You Know: A Landscape Analysis of Competency-Based Education, XQ Institute.

ICOM (2019). International Museum Day, Recuperado de https://icom.museum/en/activities/events/international-museum-day/

Kirsten Drotner, Vince Dziekan, Ross Parry, & Kim Christian Schrøder. (2019). The Routledge Handbook of Museums, Media and Communication. Routledge.

Marianne Achiam, Michael Haldrup, & Kirsten Drotner. (2021). Experimental Museology: Institutions, Representations, Users. Routledge.

Malmqvist, J., Rådberg, K. K., y Lundqvist, U. (2015). Comparative Analysis of Challenge-Based Learning Experiences. Proceedings of the 11th International CDIO Conference, Chengdu University of Information Technology, Chengdu, Sichuan, P.R. China. Recuperado de: http://rick.sellens.ca/CDIO2015/final/14/14_Paper.pdf

Minski, Kristefan. (2020). Collaboration in experimental art: case studies in co-creation, transdisciplinarity and art-science practice at Ars Electronica Futurelab. 10.13140/RG.2.2.34658.66242.

MUI (2021). Proyectos. Recuperado el 15 de mayo de 2021 de http://elmui.online

Niessen, B. (2019). Cosa sono i nuovi centri culturali, l'avanguardia della trasformazione culturale. Recuperado el 1 de julio de 2021 de https://www.che-fare.com/i-nuovi-centri-culturali-sono-fondamentali-ecco-cosa-dobbiamo-fare-per-salvarli/

Observatorio de Innovación Educativa (2016) ¿Hacia dónde se dirige esta tendencia? Recuperado de https://observatorio.tec.mx/edutrendsabr

Sachs, J. (2006). The end of poverty: Economic possibilities for our time. New York: Penguin Books.

Tecnológico de Monterrey (2018). Modelo educativo Tec21. Retrieved February 20th, 2019, from http://modelotec21.itesm.mx/les/folletomodelotec21.pdf

Tecnológico de Monterrey (2019). Competencias transversales: Una visión desde el modelo educativo Tec21. Instituto Tecnológico y de Estudios Superiores de Monterrey: Monterrey, N.L.

Tecnológico de Monterrey (2020). Estudios creativos. Instituto Tecnológico y de Estudios Superiores de Monterrey: Monterrey, N.L.

Traverso-Ribón, I., Balderas-Alberico, A., Dodero, J. M., Ruiz-Rube, I., & Palomo-Duarte, M. (2016). Evaluación sostenible de experiencias de aprendizaje basadas en proyectos. Education in the Knowledge Society, 17 (1), 19-43. doi: http://dx.doi.org/10.14201/eks2016171943

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Cross Cultural Learning Experiences Among Graduate Students in the US and France: A Case Study

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Abstract

A total of 27 graduate students enrolled in a teacher preparatory program at a higher education institution in France were paired with 37 graduate students in the United States. All the students in the US, who are finishing their Masters degree in teaching, met online with the French students during the course of the semester. Students from both countries interviewed one another regarding the education system, education system, inclusion of individuals with disabilities and culture of both parties. The class discussions and analysis of written student responses led by lead professors in France and the US reveal several benefits to cross cultural dialogues among graduate students in higher education. Students shared their experiences meeting a foreigner for the first time, identifying differences in cultures, and education systems as unique. The benefit of cross-cultural exchanges was reinforced as students shaped their thinking around ideas of inclusion and accessibility.

Keywords: Cross-Cultural, Exchange, International, Accessibility

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Introduction

The significance of cross-cultural exchange can best be examined through the work of John Dewey. His theory of reflective practice, which includes an experience, reflection, and action upon that experience, is transformative in how we perceive ourselves and others (Dewey, 1933). We use this lens through which to study cross-cultural exchange and look at how reflective practice can enhance our work and in this instance with our students - their teaching practice. An anticipated outcome of cross-cultural exchange through reflective practice is an increase in cross-cultural awareness. The fundamental requirement of which is the ability to be open to new ideas and have the capacity to change such ideas when necessary (Williams & Best, 2014). Though the goal is to increase this awareness and influence students thinking, simply participating in an exchange or a study abroad program does not guarantee multicultural competency for all participants (Phillion, Malewski, Rodriguez, Shirley, Kulago, & Bulington, 2008.

Today higher education institutions across the globe are introducing different teaching techniques to prepare high quality teachers to help students in the classroom. In the United States scholars continue to highlight the need for preparing culturally responsive teachers to work with children and families from culturally diverse backgrounds. Scholars have come up with different strategies to help future teachers gain cultural competence and confidence while working with all children. Mushell and Roberts (2011) used bibliotherapy to foster critical literacy, coupled with a two-year fieldwork experience to foster cultural responsiveness. They did recognize that their approach did not guarantee that white teacher candidates will develop cultural awareness and sensitivity, but findings from their study suggested transformations in teacher candidates. Hawley and Irvine (2011) examined class-based instruction to foster culturally responsive instructional practice. Cho and DeCastro-Ambrosetti (2006) worked with 25 pre-service teachers to determine the impact of a multicultural course on their dispositions for teaching culturally and linguistically diverse (CLD) students. Antony and Vaughn-Shavuo (2020) developed a new Tri-fold Multicultural (TFM) model to prepare culturally responsive teachers in the US. This model was developed after these researchers found attitudinal changes among teacher candidates.

While these kinds of models help students in higher education gain deeper understanding regarding cultures, practices or traditions outside their routine, study abroad programs have also played an important role in transforming student thought processes. Research has shown that study abroad experiences can help participants gain new perspectives about the world (Walters, Garii & Walters, 2009). It also provides an opportunity to be creative and use different strategies to engage with cld learners through lessons learned in a foreign land. The lead author of this article who has led several study abroad programs has observed students showing more willingness to engage with culturally and linguistically diverse learners in classrooms and accept differences among diverse learners after participating in study abroad programs. Scholars have also recorded that it promotes deeper understanding of the role of culture and language in teaching and learning (Quezada & Alfaro, 2007). Willingness. Study abroad programs also allow participants to self learn why people sometimes do things differently and creates an opportunity to live and learn outside the daily comfort zone in a foregin land. Meredith (2010) shares how students participating in study abroad programs learn cultural and linguistic differences among others . There is also evidence that many of these students have greater commitment to social justice (Cordero & Rodriguez, 2009; Lindsey, 2005), enhance professional identity (Gilin & Young, 2009; Lindsey, 2005) and has long lasting effects on teachers personal lives and their teaching Willard-Holt (2001).

Cultural Landscape: US and France

Today, public school classrooms in the US have become more diverse than ever before; it is predicted that Whites will be a minority in the US by 2060 (US Census Bureau). This change in the cultural landscape will significantly affect schools across the country. The importance of increased cultural awareness is clear when we look at data about the changing demographics in classrooms around the world.

For those in teacher preparation programs it is imperative that they examine their own cultural awareness and develop a deeper understanding of how that influences their decisions, policies, and practices. As we look at the United States and its changing school culture, data shows an increase in the US foreign born (Hilburn, 2014) as well as an increase in immigrant students in schools (Hilburn, 2014). School enrollments are higher in 2022, as compared to data from 2011, for students who are Black, Hispanic, Asian/Pacific Islander and whose primary language may not be English (National Center for Education Statistics). The impact that this has on the classroom is significant. The majority of teachers are monolingual and lack knowledge of cultures that are not their own (Pinar, 2006; Wiggins, et al., 2007) and therefore lack the knowledge required to work with culturally diverse learners (Leaks & Stonehill, 2008) (Sleeter, 2008). The effect that this lack of knowledge has on a diverse student population is far-reaching and detrimental to student success. It is also important to acknowledge that countries like the US are built by immigrants and today more and more people immigrate to the country in large numbers due to various reasons ranging from fleeing from war torn regions to seeking a better life in the West.

In France, 10% of the population is foreign born (Boubtane, 2022) and its home to Europe's largest number of international students, many of whom stay on to work in France (Boubtane, 2022). Though more specific information about the racial or ethnic make-up of those groups is impossible to find out as France doesn't collect data by race or ethnicity (Hochschild and Cropper, 2014; LaBrecht 2021). When examining the impact that this has in education and teaching practice, France's republican values focus on providing a universal, secular school experience to provide all students with equal opportunity. The emphasis is placed on unity and assimilation into French society through the acquisition of "French" identity (Schor, 2001; Akkari, 2022). There have been continued debates within France around its perceived 'indifference to difference' and how to address students' unique cultural backgrounds in their school experiences (Akkari, 2022).

Research has shown confusing, problematic, or uncomfortable experiences by teachers' when working with students from different cultural backgrounds (Chan, Lam, & Covault, 2009; Roshan, 2005; Yeh, et al., 2005). Therefore supporting teachers to examine their own cultural awareness is an important part of developing cross-cultural awareness and was one of the aims of our project. It was with these theories in mind that we launched our project of cross-cultural exchange between a group of students in the US and a group of students in France.

Current Partnership, Data Collection and Analysis

The lead author of this research has led a group of 22 students on a study abroad program to Paris in 2015. However the current pandemic has put a pause on the program.

As we face this international crisis caused by the COVID-19 pandemic, it has been reported that 90 percent of students across the globe are at home due to schools closing their

campuses (UNESCO, 2020). Thus both scholars, Antony and Lament, came up with the idea of piloting a project, pairing students in the US and France for an online meeting experience.

Data was collected using the interviews, class discussions and review of the literature. Interviews were conducted by the US and French students. The interviews were transcribed word to word and checked with students for accuracy. Transcribed interviews were any analyzed using Cross case analysis (Patton, 1990). Themes emerged from coding categories during the cross case analysis.

27 graduate students from higher education institutes in France and the United States, who are all currently taking courses on inclusive education, met online as part of a virtual exchange about their distinct cultures. The French graduate students are part of a specialized program for professionals to become accessibility advisors, program directors, and educators in programs to support people with disabilities. The American graduate students were all taking a course on Managing Inclusive environments as part of their general teacher training program. The students were required to meet online via Zoom at least two times to present themselves and their experiences to each other and then to exchange more deeply on questions around inclusion in their cultures, societies, and schools. All the students used the same questions (developed with the help of Antony and Lament) prior to the exchange to facilitate the dialogue and seek out similarities and differences between France and the US.

The questions around inclusion in their cultures, societies, and schools that students were required to answer were:
1. What is the current situation in your country regarding inclusion and special education?
2. What is the current situation in your exchange partner's country?
3. What are the challenges in your system? In the other system?
4. What are the similarities and differences between the cultures? About the education systems?
5. What did you learn from your exchange?
6. How will you use what you learned in your future profession?

They were also asked to be ready to identify areas in which they had learned something new to them as well as how this would impact the work that they complete in the future. As students shared their experiences both verbally in class discussions, as well as through written paper detailing their experiences, common themes emerged around initial interaction and cross-cultural exchange, language challenges, and accessibility.

Findings

For all the American students, it was their first time interacting with students outside of their own culture and for 34 students they met a French native for the first time. The French group was made up of Francophone students from France, Haiti, Lebanon, Tunisia, Morocco, Côte d'Ivoire, Gabon, and Martinique, so for them it was their first experience interacting with a student outside of their native language. The discussions were held in English as part of the French student's English coursework, and allowed both student groups to discuss their cultures and experiences. Initially students shared trepidation about meeting a foreign student, 25 participants who were graduate students from the US shared that they had an initial fear of meeting a strange foreign student via zoom. Though following the exchange, 27 students mentioned their interest to travel to France after this experience.

As such a second theme emerged, one by which this was a two-way learning experience regarding language, culture, and education systems. As seen in the American group, students increased their confidence to meet and discuss with a non native speaker. While the French group had "double punishment", as it was described by one student, to both speak in English (one content area) while discussing disability (a second content area). 14 French participants addressed their apprehension about the language and discussed how concerned they were to speak clearly and comfortably in English. 10 found the exchange to be pleasant and rewarding despite the language barrier whereas two students stated that it was too difficult for them to effectively communicate. 8 French students were able to self evaluate their level of English at a higher than anticipated level as compared to before the exchange.

Another theme that emerged was the lack of prior knowledge regarding the education system and services for people with disabilities in countries of their counterpart. Participants highlighted that despite laws protecting people with disabilities in both countries, the lack of accessibility for individuals with disabilites and prejudices around people with disabilities still leads to exclusion and discrimination. 11 students from the US shared accessibility as a concern in the US whereas all the students from France shared accessibility as a concern for individuals with disabilities in their country. One of the limitations of this case study was that participants from France were all teachers (or equally qualified professionals working with people with disabilities) while participants from the US were in their teacher preparatory programs. This difference in training was most evident in the discussion around the nuances and intricacies of disability law and accessibility.

Limitations

The limitations of this case study were around the limited time for interviews and the fact that all interviews were virtual. In-person interactions are critical for cross-cultural exchange though participants found zoom to be an intimate, yet accessible way to "travel" to meet someone else. To further the work done in this project, facilitating in-person visits for both students and faculty from both institutions through a study abroad program, faculty exchange, or research opportunities would be a powerful way to continue to exchange and build cross-cultural awareness.

Conclusion

This case study examines the outcomes of a cross-cultural exchange between students from the US and France. Given the vastly different demographic and ideological make-up of the two countries, students revealed themes around language, culture, and education systems. Students identified preconceived ideas that they held and asked questions of each other's experiences. Dewey's theory on reflective practice illustrated how we can process an experience through reflection. The student's own reflections on their virtual exchange identified areas in which they had grown in their own cross-cultural awareness, which is fundamental to a teacher's skill set in diverse classroom settings. To develop this project further, it would be interesting to measure how students put their new understandings into action in future work.

References

Antony, P.J. & Vaughn-Shavuo, F. (2020).Tracking attitudinal changes among teacher candidates in support of ensuring inclusive and equitable quality education. *Current Studies in Comparative Education, Science and Technology.* 7(1). 10-26.

Akkari, A., Radhouane, M. (2022). Intercultural Education in France. In: Intercultural Approaches to Education. Springer, Cham. https://doi.org/10.1007/978-3-030-70825-2_9

Boubtane, E. (2022, May 5). France reckons with immigration amid reality of rising far right. migrationpolicy.org. Retrieved June 16, 2022, from https://www.migrationpolicy.org/article/france-immigration-rising-far-right#:~:text=Between%202000%20and%202018%2C%20an,one%2Dquarter%20of%20all%20immigrants.

Chan, K. C., Lam, S.-F., & Covault, J. (2009). White American pre-service teachers' judgments of Anglo and Hispanic student behaviors. Intercultural Education. 20(1), 61-70.

Cho, G., & DeCastro-Ambrosetti, D. (2006). Is ignorance bliss? Pre-service teachers' attitudes toward multicultural education. *The High School Journal, 89(*2), 24-28. DOI?

Cordero, A., & Rodriguez, L. N. (2009). Fostering cross-cultural learning and advocacy for social justice through an iimmersion experience in Puerto Rico. Journal of Teaching in Social Work, 29, 134–152.

Dewey. J (1933). How we think : a restatement of the relation of reflective thinking to the educative process. Amherst: MA. Prometheus.

Gilin, B., & Young, T. (2009). Educational benefits of international experiential learning in an MSW program. International Social Work, 52, 36–47.

Hilburn, J. h. (2014). Challenges Facing Immigrant Students Beyond the Linguistic Domain in a New Gateway State. Urban Review, 46(4), 654-680.

Hochschild, J. L., & Cropper, P. (2010). Immigration regimes and schooling regimes: Which countries promote successful immigrant incorporation? Theory and Research in Education, 8(1), 21–61. https://doi.org/10.1177/1477878509356342

LaBreck, A. (2021, February 1). Color-blind: Examining France's approach to race policy. Harvard International Review. Retrieved June 16, 2022.

Lindsey, E. W. (2005). Study abroad and values development in social work students. Journal of Social Work Education, 41, 229–249.

Meredith, R. A. (2010). Acquiring Cultural Perceptions during Study Abroad: The Influence of Youthful Associates. *Hispania*, *93*(4), 686-702.

Muschell, L. H., & Roberts, H. M. (2011). Bridging the cultural gap: one teacher education program's response to preparing culturally responsive teachers. *Childhood Education, 87*(5), 337-340.

Patton, M. Q.(1990). Qualitative Evaluation and research methods. Newbury Park, California: Sage Publications.

Quezada, R. L., & Alfaro, C. (2007). Biliteracy Teachers' Self-Reflections of Their Accounts while Student Teaching Abroad: Speaking from "the Other Side." Teacher Education Quarterly, 34(1), 95–113

Roshan, D. (2005, August 12). Engaging with Islam's disaffected youth. Times Educational Supplement, p. 14

Schor, N. (2001). The Crisis of French Universalism. Yale French Studies, 100, 43–64. https://doi.org/10.2307/3090581

United States Census Bureau. https://www.census.gov/newsroom/press-releases/2015/cb15-tps16.html

Walters, L. M., Garii, B., & Walters, T. (2009). Learning Globally, Teaching Locally: Incorporating International Exchange and Intercultural Learning into Pre-Service Teacher Training. Intercultural Education, 20.

Williams, K. and G. Best (2014). Short Study trips Abroad: Internationalizing Business Curricula. Journal of Teaching in Travel and Tourism, 4(3): 240-325.

Willard-Holt, C. (2001). The impact of a short-term international experience for preservice teachers. Teaching & Teacher Education, 17(4), 505-517.

Yeh, C. J., Ma, P.-W., Madan-Bahel, A., Hunter, C. D., Jung, S., Kim, A. B., et al. (2005). The cultural negotiations of Korean immigrant youth. Journal of Counseling and Development, 83(2), 172-182.

Yeh, C. J., Ma, P., & Madan-Bahel, A. (2005). The Cultural Negotiations of Korean Immigrant Youth. Journal Of Counseling & Development, 83(2), 172-182.

The Impact of the COVID-19 on Teachers' Sense of Efficacy and Their Attitudes Towards Online Learning

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Abstract

Teachers' sense of efficacy has been pinpointed in a rich array of recent studies to determine the teachers' readiness and success in adapting themselves to online teaching during the abrupt school closure amid the Pandemic. With attempts to ensure the quality of teaching and learning, acknowledgement of teachers' self-efficacy and attitude towards the new form of education is crucial for school leaders and trainers to provide appropriate training, supportive policies, and changes in curriculum development. By employing the Teachers' Sense of Efficacy Scale (TSES; M. Tschannen-Moran & A. Woolfolk-Hoy, 2001) and Test of e-Learning Related Attitudes scale (TeLRA; DH Kisanga and G. Ireson, 2016) followed by semi-structured interviews, this paper unravels the practices of teaching during the Covid-19 from the perspective of language teachers (N = 109) in Vietnam from different levels and educational sectors. Results from this study reveal that scores for efficacies in student engagement and classroom management are low. In comparison to the mean score from the TeLRA scale, 45% of the teachers held a negative attitude towards teaching online. During the interviews, they reflected that their preference for online teaching was due to remote work's convenience, not its effectiveness. Further directions for research and recommendations to ensure the prevalence of online learning are also discussed.

Keywords: Teacher's Self-Efficacy, Teacher's Attitude, Online Learning

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Introduction

Since the advent of the Internet, online learning has emerged as an alternative option for educational stakeholders despite doubts and critics (Berge, 1998; Wang et al., 2003; Liu et al., 2007; Shea, 2007). However, it was not until the spread of the COVID-19 pandemic starting in early 2020 that virtual classrooms dominated the global learning practices as schools were forced to close temporarily, and lockdown protocols were imposed to ensure the community's safety. Face-to-face classrooms, hence, were abruptly shifted to be conducted via online platforms, such as Google Meet, Zoom, Microsoft Teams, or ClassIn (see Yen & Nhi, 2021; Dash et al., 2021; Wang & Huang, 2022), without educational stakeholders' readiness, especially the teachers. Hodges et al. (2020) even described this crisis in education in the midst of the pandemic using the term "Emergency remote teaching (ERT)", and this sudden transition to online teaching resulted in several deficiencies (Ma et al., 2021). In a report by Van der Spoel et al., (2020), most teachers and organisations had approximately three days to prepare for switching offline to online classes in the Netherlands. Amid the pandemic, while schools and educational sectors provided technological platforms to accommodate teachers' and students' engagement (Marshall et al., 2020), the teachers confronted a plethora of challenges to 1) adopt new approaches to lesson planning and giving instruction in little time (Honigsfeld & Nordmeyer, 2020; Van der Spoel, 2020), 2) familiarise with new platforms to conduct teaching (Wiggins, 2020; Tim Pressley & Cheyeon Ha, 2021), and 3) endure stress and suppress burnout due to parent communication, administrative support, and anxiety (Pressley, 2021; Yang, 2021; Yang et al., 2021).

In Vietnam, schools were shut down on a national scale due to the severe outbreaks of COVID-19 taking place between February - May 2020 (3 months) and May 2021 - February 2022 (9 months). Although online training workshops for teachers were immediately organised to prepare them for conducting online classes (Pham & Ho, 2020), teachers' frustration with the novel teaching approach was inevitable as their role accumulated more duties as they had to be the facilitators and class monitors simultaneously. Such ambitious tasks would not be possible without a prodigious amount of continuous effort from the teachers to carry out prolonged online teaching hours. Among the influential factors in the classroom, teachers' sense of efficacy (TSE) has been pinpointed in a rich array of recent studies to determine the teachers' readiness and success in adapting themselves to online teaching (Horvitz et al., 2015). With attempts to ensure the quality of online teaching and learning, TSE and teachers' attitude (TA) (particularly English language teachers) towards ERT are set to be the focus of this study. Its aims are to 1) report the status quo of teaching practices and 2) propose solutions to alleviate the encumbrance arising from ERT. The research questions are:

1) What were teachers' sense of efficacy scores while teaching amid the COVID-19 pandemic?
2) What were their attitudes while embracing the abrupt changes in educational practice?
3) How did teachers cope with the abrupt changes in teaching during the Pandemic?

Literature review

Teachers' sense of efficacy

The bulk of the literature on TSE is associated with Bandura's theoretical self-efficacy framework (1977). In an attempt to conceptualise the notion, Bandura claimed that it could govern the amount of effort and perseverance of an individual when confronting hardship. Regarding educational settings, a notable definition of a teacher's self-efficacy can be traced back to Tschannen-Moran & Hoy (2001) as they referred it as "a teacher's judgement of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 783). Similarly, Dellinger et al., (2008) also defined TSE as "individual beliefs in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation" (p.4).

Despite the ample studies to examine TSE, there is a consensus on its implications in the classroom which can determine the students' motivation towards learning and outcome (Guskey, 1988; Stein & Wang, 1988; Tschannen-Moran & Woolfolk Hoy, 2002; Thoonen et al., 2011). This is also true for online learning. In a recent study by Gordon et al. (2022), TSE was noted as the key factor that can exert an influence on the quality of the online course and how the students experience it. In addition, the higher sense of self-efficacy the teachers possess, the more creative work and effort they devote to teaching. Specifically, teachers with high self-efficacy showcase the willingness to support, implement and embrace positive change. Moreover, they retain persistence during adversity, embrace new ideas without being non-judgemental, respect diversity, and experiment with novel teaching strategies even if it exceeds their comfort zone (see Charalambous & Philippou, 2010; Cerit, 2019; Gordon et al., 2022).

Factors thought to be influencing TSE have been explored in several studies, and one of the most well-known measures was Ohio State Teacher Efficacy Scale (OSTES) devised by Tschannen-Moran & Hoy (2001). In their landmark study, there were three domains that construct TSE, namely efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. Thus far, a number of global studies have adopted OSTES to evaluate TSE. The findings from Chacon's study (2005), which recruited 104 English language teachers in Venezuela to give response to the short form of OSTES, reveal that they scored the lowest in efficacy for student engagement (M = 6.59) while efficacy for instructional strategies received a relatively higher score (M = 7.13). In a study by Wolters and Daugherty (2007), 6.86 was the score for engagement, and 7.36 was for teachers' instructional efficacy scores across 1000 teachers. Amid the pandemic, TSE scores have changed (Pressley & Ha, 2021). One study of 132 Ontario secondary teachers from Dolighan & Owen (2021) reported an astonishing result. Specifically, the score for efficacy for student engagement was still the lowest but at an alarming level (M = 4.73), and M = 5.76 was the score for efficacy for instructional strategies. The plunge in TSE score is significant between before and during the COVID - 19, so further studies should be conducted to examine TSE in various contexts.

It is also noted that TSE in online learning is attached to the notion of the teachers' efficacy in using computers or web-based platforms (Kao & Tsai, 2009; He, 2014; Dolighan & Owen, 2021). Therefore, attempts to adjust the OSTES by adding a sub-scale for digital use have been made, such as The Michigan Nurse Educators Sense of Efficacy for Online Teaching (MNESEOT) devised by Robinia, (2008). Alternatively, in a study by Kao & Tsai, (2009),

Internet-efficacy towards web-based learning was reported to correspond to teachers' attitudes ($r > 0.20$, $p < 0.001$). Therefore, examining the teachers' attitude towards online learning as the substitute for teachers' sense of efficacy for technology use can be viable. The literature review of their attitudes is discussed in the next section.

Teachers' attitude towards online teaching

Attitude is related to readiness for response (Allport, 1935; Oskamp & Schultz, 2005), encompassing feelings and thoughts which can be positive or negative concerning a specific object or belief (Semerci & Aydın, 2018). The determinants of teachers' attitudes towards online teaching include 1) their acknowledgment of technology's challenges, 2) benefits, 3) their experience with computers, and 4) leisure interest in e-learning innovations and the use of computers (Kisanga, 2016; Kisanga & Ireson, 2016).

Although the prevalence of online learning has been well documented to offer tangible convenience (Wang et al., 2003; He, 2014), it has also resulted in mixed attitudes among educators. This, surprisingly, has been reported to be relatively half positive and half negative since the advent of online learning until now. Particularly, one study found that 40% of faculty viewed online teaching as an incentive, whereas 30% considered it an obstacle (Rockwell et al., 1999). In the same vein, in a recent study conducted by Dorji (2021), it was reported that 46% of the teachers held negative attitudes towards online learning. Their concerns shared similarities to Rockwell et al. 's findings (1999), highlighting that teachers' computer literacy skills encumbered their motivation to conduct online teaching. Moreover, there are other factors that sustain resistance and undermine the teachers' attitude such as increased enrollments, lack of control over online curriculums, and a lack of institutional support (Clark, 1993; Olcott & Wright, 1995).

The intention to improve the quality of online learning, particularly ERT, therefore, should be aligned with increasing TSE and their attitude to avoid any undesirable circumstances such as the perception of lack of support, leading to teachers' burnout (DiGregorio & Liston, 2018) and low retention (Hoang, 2020).

Research Design

A complementary mixed-method design that integrates qualitative and quantitative data was employed in this study to improve the reliability of the study findings (Creswell, 1999; Schifferdecker and Reed, 2009; Creswell, 2018). Online data collection was prioritised due to the lockdown in Vietnam. Specifically, numeric data were collected by mailed survey instrument using Google Form, while text information was gathered by recorded interviews conducted via Google Meet.

Procedure

Online surveys on Google Form and invites for a 30-minute interview attached with a consent form were sent via emails. Subsequently, the data were collected from May 30 to June 15, 2021, which was also the peak of the pandemic in Vietnam. From July 1 - 15, 2021, participants arranged their time to attend the meetings via Google Meet.

Participants

For the purpose set in this study which aims to measure TSE and teachers' attitudes towards online learning, 109 English language teachers (both Vietnamese and Expats) were recruited as participants. Additionally, they worked for various educational sectors, including public and private schools, universities, and language institutes. Amid the pandemic, they received different numbers of training to support their transition to online teaching (see Tables 1 &2)

Teaching Program

		Responses		Percent of Cases
		N	Percent	
program[a]	General English for adults	63	25.2%	57.8%
	English for kids	43	17.2%	39.4%
	English for teenagers	57	22.8%	52.3%
	Test-prep (IELTS, TOEFL, TOEIC, SAT)	53	21.2%	48.6%
	English for Specific Purposes	31	12.4%	28.4%
	Other	3	1.2%	2.8%
Total		250	100.0%	229.4%

Table 1 – Teaching Program

How many training sessions for online teaching have you attended?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	16	14.7	14.7	14.7
	1-2	33	30.3	30.3	45.0
	3-4	33	30.3	30.3	75.2
	more than 5	27	24.8	24.8	100.0
	Total	109	100.0	100.0	

Table 2 – Number of training sessions

Teachers' self-efficacy

To measure the TSE, this study adopted the original short form of the Teacher's Sense of Efficacy Scale (M. Tschannen-Moran & A. Woolfolk-Hoy, 2001). The questionnaire (see Appendix a) includes 12 questions in three following categories:

- Efficacy for Instructional Strategies   Items 5, 9, 10, 12
- Efficacy for Classroom Management   Items 1, 6, 7, 8
- Efficacy for Student Engagement   Items 2, 3, 4, 11

This measure was assessed along a 9-point continuum ranging from 1 - Nothing, 3 - Very Little, 5 - Some Influence, 7 - Quite A Bit, to 9 - A Great Deal.

Teachers' attitudes

To measure Teachers' attitudes toward e-learning, the TeLRA scale developed by Kisanga & Ireson (2016) was used. The factors explored in the 36-item questionnaire see (Appendix B) include:

- Benefits from e-learning   Items: 1, 2, 3, 4, 5, 6, 14, 23, 34
- Challenges of e-learning   Items: 7, 10, 11, 12, 13, 18, 19, 20, 21, 26, 27, 33
- Attitude on using computer systems   Items: 28, 29, 30, 31, 35, 36
- Leisure interest in e-learning innovations and use of computers   Items: 8, 9, 15, 16, 17, 22, 24, 25, 32

The TeLRA scale consisted of a four-point Likert's response format with degrees of agreement ranging from 1- strongly disagree, 2- disagree, 3- agree to 4- strongly agree.

Data Analysis for OSTES & TeLRA

All data from OSTES and TeLRA were analysed using a statistical package for the social sciences (SPSS). A reliability test (Cronbach's Alpha) was also employed to ensure the data's consistency. The obtained results for both measures are reliable, with 0.93 and 0.87 for OSTES and TeLRA, respectively.

For TSE, mean and median scores from Efficacy for Instructional Strategies, Efficacy for Classroom Management, and Efficacy for Student Engagement were computed and compared.

For TeRLA, reverse coding was applied for negative worded items: 7, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21, 26, 27, 28, 29, 30, 33, 35, & 36 before adding all scores of responses and comparing with the median score. Eventually, responses with the above mean scores were regarded as "positive attitude", and vice versa for "negative attitude".

Interviews

Online interviews were conducted via Google Meet, offering a comfortable space for the participants to share their thoughts and feelings (Creswell, 2018). Prior to the meeting, the participants received the consent form and language preference form (Vietnamese or English). They all acknowledged the aim of the study and that the conversations were recorded. The questions were semi-structured and followed the following themes:

- Participants' experience with teaching online (particularly with student engagement and classroom management)
- Participants' feelings about teaching online (particularly with student engagement and classroom management)
- Participants' strategies to cope with difficulties they have with online teaching

For ethical considerations, the participants' names are kept confidential and only displayed by their initials.

Findings

Teachers' self-efficacy

The average score for Efficacy in Student Engagement is (M = 6.17) while that of Efficacy in Instructional Strategies is slightly higher (M = 6.57), followed by that of Efficacy in Classroom Management (M = 6.47) (See Table 3).

Teachers' Sense of Efficacy Scale

		Efficacy in Student Engagement	Efficacy in Instructional Strategies	Efficacy in Classroom Management:
N	Valid	109	109	109
	Missing	0	0	0
Mean		6.1720	6.5711	6.4174
Median		6.5000	7.0000	7.0000
Std. Deviation		1.85707	1.80473	1.73207

Table 3 – Teachers' Sense of Efficacy

Specifically, from the descriptive data for Efficacy in Student Engagement, teachers struggled most with the degree of assisting the students' families to motivate them, and the responses for this aspect also scored the lowest in the questionnaire. Another striking feature is that they also scored mildly low in encouraging students with low interest in learning (See Table 4).

Efficacy in Student Engagement

		2. How much can you do to motivate students who show low interest in school work?	3. How much can you do to calm a student who is disruptive or noisy?	4. How much can you do to help your students value learning?	11. How much can you assist families in helping their children do well in school?
N	Valid	109	109	109	109
	Missing	0	0	0	0
Mean		6.0275	6.2569	6.4495	5.5872
Median		6.0000	7.0000	7.0000	6.0000
Std. Deviation		1.80256	1.93124	1.77684	2.07815

Table 4 – Efficacy in Student Engagement

Results of the subscale - "Efficacy in Instructional Strategies" reveal that except for employing diverse tools and platforms for students' assessment, teachers could manage to provide instructions with ease, even if the students were confused (See Table 5).

Efficacy in Instructional Strategies

		5. To what extent can you craft good questions for your students?	9. To what extent can you use a variety of assessment strategies?	10. To what extent can you provide an alternative explanation or example when students are confused?	12. How well can you implement alternative teaching strategies in your classroom?
N	Valid	109	109	109	109
	Missing	0	0	0	0
Mean		6.4771	6.3945	6.8899	6.5229
Median		7.0000	7.0000	8.0000	7.0000
Std. Deviation		1.82369	1.94850	1.99694	1.95124
Minimum		1.00	1.00	1.00	1.00
Maximum		9.00	9.00	9.00	9.00

Table 5 - Efficacy in Instructional Strategies

The score for controlling disruptive behaviours in the online classroom is slightly lower than other questions in the same subscale - "Efficacy in Classroom Management (See Table 6).

Efficacy in Classroom Management:

		1. How much can you do to control disruptive behavior in the classroom?	6. How much can you do to get children to follow classroom rules?	7. How much can you do to get students to believe they can do well in school work?	8. How well can you establish a classroom management system with each group of students?
N	Valid	109	109	109	109
	Missing	0	0	0	0
Mean		6.2294	6.3670	6.6055	6.4679
Median		7.0000	7.0000	7.0000	7.0000
Std. Deviation		2.00755	1.93726	1.90038	1.98405
Minimum		2.00	1.00	1.00	1.00
Maximum		9.00	9.00	9.00	9.00

Table 6 - Efficacy in Classroom Management

Teachers' attitudes towards online learning

The Median score computed is 100, so respondents with a Mean score above 100 are labelled to have positive attitudes towards online learning and vice versa for those with a Mean score below 100. The gap between positive and negative attitudes is insignificant when 55% of the teachers held positive attitudes and 45% had negative attitudes (See Table 7).

Teachers' attitude

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive	60	55.0	55.0	55.0
	Negative	49	45.0	45.0	100.0
	Total	109	100.0	100.0	

Table 7 – Teachers' Attitude

Details of the questions indicate that the majority of the teachers (72%) found working with a computer at home barely frustrating (see Figure 1). "Teaching online is tiresome", however, was confirmed by 55.9% of the respondents (see Figure 2). Therefore, this means that their negative attitudes were because of the nature of online learning itself, not their reluctance towards working with the computer.
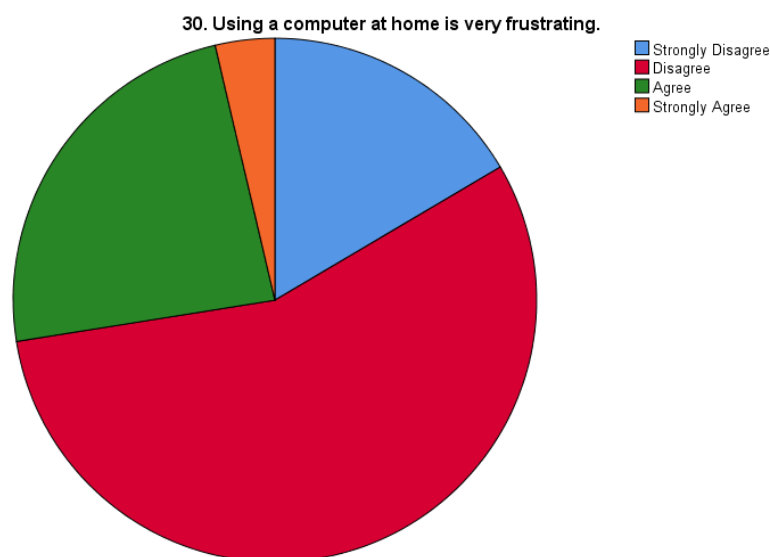
Figure 1 – responses for item 30
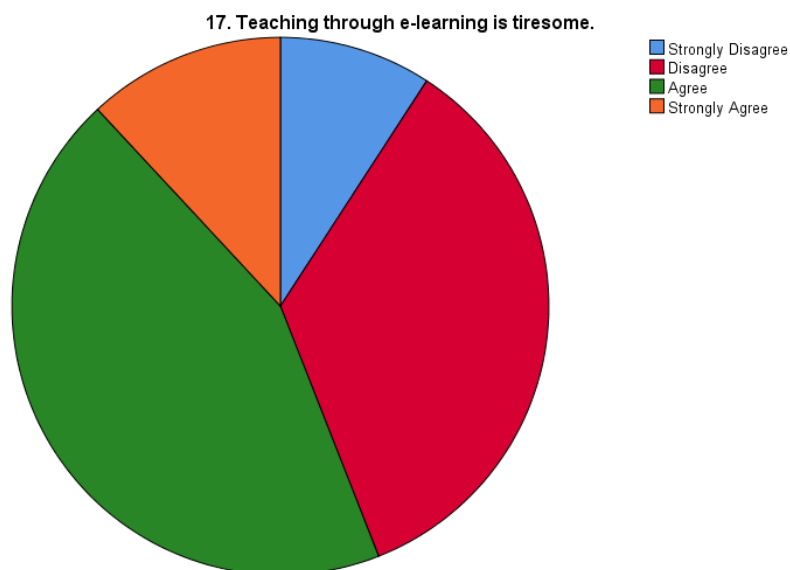
Figure 2 – Responses for Item 17

Teachers' reflection on their experience with online teaching

Most teachers reported that classroom management and online interaction significantly depended on external factors, including noise and the Internet connection. These issues were far from the teachers' control to maintain the continuity of the lesson and student engagement.

> *"...like some of my students, they live in rural areas and their **internet connection** is not well connected so they **lost the connection** sometimes and I had to wait for them to come back to the class." - (B)*

> *"...when I use the computer, there's **noise outside** which I could not control, for example my neighbour's singing, or the noise from house construction." - (NH)*

Another factor mentioned by many teachers was that their students turned their cameras off. This could be the result of either Internet instability or even the students' self-discipline misconduct. Regardless of the reasons, the participants embraced the negative feelings. Specifically, negative words related to feelings such as "desperate", "tired", or "lonely" were used by teachers to describe their emotions whenever encounter such a problem:

> *"I felt **desperate** when they [the students] talked nothing, and also angry" (NH)*

> *"Quite **tired**! Like I wanted them to interact but they didn't want to. Because when they.. when they keep studying like this, they tend to be **passive**. I feel like they would become more passive, and not for my class only, but also for other classes." (TL)*

> *"I felt **lonely**, like I was the only person in the class" (QA)*

Other teachers expressed positive attitudes toward online, but the reasons were not from their high sense of efficacy. In fact, they were due to the comfort of working from home, such as saving time for travelling:

> *"And the outcome, I don't think it [online] can be comparable to offline. But I did have VIP sessions, like one-on-one, or some small-size classes which I could manage, and I feel it's still plausible. I even feel it is more convenient because I don't have to travel.* **Staying at home is awesome***." (TL)*

> *"They [my colleagues] would choose to teach online and the reason is that they're* **afraid to commute***, being in a* **crowded and small elevator***. When they teach at home, they can* **order food, turn their cameras off***."*
> *(NH)*

To cope with ERT, many teachers followed the protocols from school leaders and attended several training sessions for new alterations in classroom conduct. They, however, addressed mixed opinions regarding how practical the training was. Learning from peers, in contrast, was noted to be the motivation for teachers to experiment with novel teaching methods:

> *"To apply [what I learned from the training] is* **not possible***. I mean, I have to try. Sometimes it isn't like what it seems, when I tried it with real teaching, it might not work out. I had to try over one or two classes to know whether it is effective."*
> *(TL)*

> *"Accidentally, I've seen* **my colleague's Facebook post** *- it's a screenshot of his Zoom class and naturally,* **I had the pressure***, like why it's so fun but my class is … weird."*
> *(NH)*

Discussion

Without readiness, language teachers in Vietnam had confronted several issues of online teaching, which had been escalated by the Pandemic (see Yang et al., 2021; Tim Pressley & Cheyeon Ha, 2022; Tim Pressley & Cheyeon Ha, 2021; Choate et al., 2021; Marshal et at., 2020). From what the teachers had experienced, educational practices in Vietnam were reactive instead of proactive. Online classes in the Vietnamese context, therefore, should be referred to as Emergency Remote Teaching (Hodges et al., 2020) rather than proper online teaching. Therefore, teachers' sense of efficacy was affected, especially their Efficacy in Student Engagement and Classroom Management (Tschannen-Moran & Hoy, 2001). The results are slightly similar to the prior study from Pressley & Ha (2021) as teachers' Efficacy in Student Engagement score was the lowest. From the interviews, teachers blamed unpredictable and unpreferable circumstances related to the Internet connection and the inadequate facilities or technological equipment. In addition, teachers still claimed to be dubious about which teaching methods were effective for online classes though they had received training sessions that helped familiarise themselves with online teaching. The training delivered by the schools, hence, could have included more sharing from teachers regarding problems and solutions occurring while teaching online, as most participants reported learning from their peers rather than in-house training.

Results from the TeLRA scale demonstrate a mixed attitude ratio which shares a similarity to the studies from Dorji, (2021). Notably, teachers in this study still expressed doubts and reluctance towards conducting lessons via web-based platforms. Descriptive answers from the interviews reveal that students' presence and self-discipline to participate and turn their cameras on significantly affect the teachers' feelings toward online teaching, which were

mostly negative in this study. Moreover, most teachers' fondness for online learning stemmed from its convenience rather than their belief in its success.

Recommendations

The inevitable turbulence in teaching practice amid the Pandemic yields valuable experience for all educational stakeholders in promoting online learning. First and foremost, its success depends on concrete action plans regarding:

Human capital;
- Facilities, including teaching rooms, powerful computers, and headsets;
- Authorised accounts on proper online teaching platforms rather than using meeting platforms as there will be a lack of educational tools, encumbering classroom engagement and management;
- Sharings from teachers, especially Master teachers, so that they can learn from each other's teaching practices; and
- Communication with learners or their parents to ensure their participation while learning

In a study by (Cavanaugh, 2005), online teaching for 15 students was equivalent to 40 ones in conventional classes. Thus, the class size for online classrooms should be adjusted to alleviate the problems of classroom interaction and management. In 2019, the average class size in Vietnam is 48 - 52 pupils (Nhat Duy, 2019), and this can also be the number of students that language teachers had to manage in an online class which might be overwhelming, frustrating, and challenging for both learners and educators. The suggested class size for online classrooms, according to (Tomei, 2006), should be 12 students. However, small-size classes can be a burden for the schools' facilities, human capital, and profits, so decisions to launch online classrooms should be contemplated.

Finally, more funding should be allocated for devising proper teaching platforms with a sufficient number of tools to facilitate interaction among teacher-student, teacher-students, and students-students. The display should be user-friendly so that everyone can learn with ease, and little time is wasted on getting ready for online learning for both learners and educators. In addition, gamification should also be attached to the platforms to offer teachers convenience when planning their active lessons.

Limitations & further directions

First of all, the study was conducted amid the Pandemic, while it could have been a longitudinal one to track the TSE and their attitudes before-while-post the COVID - 19. Since the emailed surveys were sent, they cannot approach teachers in remote areas where the Internet connection could be inaccessible. Moreover, teachers with low technological skills were also reluctant to participate, so the results could only reflect a part of the mosaic picture of online teaching practices in Vietnam during the Pandemic. Therefore, further research should focus on varied groups in all parts of the country. Another limitation of this study is that observation should be employed as an additional instrument to provide a holistic picture of the actual online classrooms since the reports from interviews could also be subjective.

Conclusion

Online lessons in Vietnam, particularly amid the pandemic, had been conducted on a national scale which had never occurred, initiating the prevalence of online learning. Frustrations from all stakeholders, therefore, were inevitable, and so were the deficiencies in planning and organising virtual classrooms. As a result, the TSE and teachers' attitudes towards online learning have been influenced, and in this research, teachers' scores for efficacies in student engagement and classroom management are low. Their attitudes towards the abrupt transition to online learning platforms are also mixed, despite their keenness for technological advancement. The main problem undermining online classrooms' inclusion and success lies in the insufficient preparation for Internet connection, especially in remote areas. Furthermore, learners' and teachers' readiness to embrace the changes and comply with specific disciplines to promote proactive learning is significant. Online learning is indeed the future of education, yet it takes more time for learners and teachers to familiarise themselves with being one screen away from each other. Moreover, since the cost for proper online classrooms and teaching platforms that can accommodate interactions to make sense of the lessons still exceeds the schools' budget, efforts should be made to provide cost-free online education, especially for remote areas.

Appendix

Appendix A

Teachers' Sense of Efficacy Scale[1] (short form)

Teacher Beliefs	**How much can you do?**								
Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing	Very Little		Some Influence		Quite A Bit		A Great Deal	
1. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Appendix B

Test of e-Learning Related Attitudes (TeLRA) Scale

Information about teachers' understanding and attitudes about e-learning.

Instructions

- There is no wrong answer; each response will be treated as a correct one. Your opinion is what is required in this study.
- Do not think too long about each statement. It should take you around 10 minutes to complete.
- For each statement, put a tick (✓) to show your level of agreement; **Strongly Disagree**, **Disagree**, **Agree,** and **Strongly Agree**. Do not tick across two boxes.

	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	E-learning is very economical for educational institutions to adopt.				
2	I believe using e-learning will improve the quality of my work.				
3	Computers make work more interesting.				
4	I prefer reading articles in e-learning.				
5	It is easier to revise electronic educational materials than printed material				
6	I prefer using a computer to prepare my lessons.				
7	I feel uncomfortable reading a text book on a computer screen than a physical text book.				
8	I enjoy teaching using computers.				
9	Delivering a lecture through electronic technologies is very difficult.				
10	E-learning requires expensive technical support.				
11	E-learning reduces quality of knowledge attained.				
12	Interacting with the computer system is often frustrating.				
13	A face-to-face method is more learner-centred than E-learning methods.				
14	I believe using e-learning technologies will improve my job performance.				
15	Communicating through social networks is fun.				
16	I like reading magazines on new technology innovations.				
17	Teaching through e-learning is tiresome.				
18	E-learning increases learners' social isolation.				

	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
19	E-learning technologies are difficult to use.				
20	Using computer systems requires a lot of mental effort.				
21	Discussions on e-learning technologies are uninteresting.				
22	My institution has enough teaching-learning resources to carry out e-learning.				
23	E-learning will increase teachers' efficiency.				
24	Working with computers is exciting.				
25	I like discussing about new e-learning innovations.				
26	Supporting learners in an e-learning environment is very difficult.				
27	E-learning infrastructure is very expensive for the government to afford.				
28	It will be difficult for me to become skilful in the use of e-learning tools.				
29	I make errors frequently when using a Computer.				
30	Using a computer at home is very frustrating.				
31	Using e-learning technologies will allow me to accomplish more work than would otherwise be possible.				
32	I enjoy computer games very much.				
33	E-learning is a threat to teachers' employment.				
34	E-learning will provide me with better learning opportunities than traditional means of learning.				
35	I find computer online interaction unexciting.				
36	Communicating through electronic mails is annoying.				

References

Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.). In *A handbook of social psychology* (pp. 798-844). Clark University Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215.

Berge, Z. L. (1998). Barriers to online teaching in post-secondary institutions: Can policy changes fix it. *Online Journal of Distance Learning Administration*, *1*(2), 2. Retrieved from https://www.researchgate.net/profile/Zane-Berge/publication/265525982_Barriers_To_Online_Teaching_In_Post-Secondary_Institutions_Can_Policy_Changes_Fix_It/links/54a6d5520cf257a6360aa187/Barriers-To-Online-Teaching-In-Post-Secondary-Institut

Cameron, D. (2001). *Working with spoken discourse*. London: SAGE.

Cavanaugh, J. (2005). Teaching online-A time comparison. *Online Journal of Distance Learning Administration*, *8*(1), 1-9.

Cerit, Y. (2019). Relationship between teachers' self-efficacy beliefs and their willingness to implement curriculum reform. *International Journal of Educational Reform*, *22*(3), 252–270.

Chacon, C. T. (2005). Teachers ' perceived efficacy among English as a foreign language teachers in middle schools in Venezuela. *Teaching and Teacher Education*, *21*(3), 257–272.

Charalambous, C. Y., & Philippou, G. N. (2010). Teachers' concerns and efficacy beliefs about implementing a mathematics curriculum reform: integrating two lines of inquiry. *Educational studies in Mathematics*, *75*(1), 1-21.

Cohen, L., Manion, L., & Morrison, K. (2017). *Research Methods in Education*. Taylor & Francis.

Creswell, J. W. (1999). Mixed-method research: Introduction and application. In G. J. Cizek (Ed.), *Handbook of Educational Policy* (pp. 455-472). Academic Press.

Dash, S., Samadder, S., Srivastava, A., Meena, R., & Ranjan, P. (2021). Review of Online Teaching Platforms in the Current Period of COVID-19 Pandemic. *Indian Journal of Surgery*, *84*, 1-6.

Dellinger, A. B., Bobbett, J. J., Olivier, D. F., & Ellett, C. D. (2008). Measuring teachers' self-efficacy beliefs: Development and use of the TEBS-Self. *Teaching and Teacher Education*, *24*(3), 751–766.

DiGregorio, N., & Liston, D. D. (2018). Experiencing Technical Difficulties: Teacher Self-Efficacy and Instructional Technology. In C. B. Hodges (Ed.), *Self-Efficacy in Instructional Technology Contexts* (pp. 103-117). Springer International Publishing.

Dolighan, T., & Owen, M. (2021). Teacher Efficacy for Online Teaching During the COVID-19 Pandemic. *A journal of educational research and practice*, *3*(1), 95-116.

Dorji, K. (2021). Online Teaching during the COVID Pandemic: Attitude of Teachers towards e-Learning in Bhutanese Classroom. *Journal on School Educational Technology*, *16*(4), 46.

Dunbar, M., & Melton, T. D. (2018). Self-Efficacy and Training of Faculty Who Teach Online. In C. B. Hodges (Ed.), *Self-Efficacy in Instructional Technology Contexts* (pp. 15-33). Springer International Publishing.

Gordon, D., Blundell, C., Mills, R., & Bourke, T. (2022). Teacher self-efficacy and reform: a systematic literature review. *The Australian Educational Researcher*.

Guetterman, T. C., & Creswell, J. W. (2019). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson.

Guskey, T. R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education*, *4*(1), 63-69.

He, Y. (2014, June). Universal Design for Learning in an Online Teacher Education Course: Enhancing Learners' Confidence to Teach Online. *Journal of Online Learning and Teaching*, , *10*(2), 283-298.

Hoang, A.-D. (2020). Pandemic and teacher retention: empirical evidence from expat teachers in Southeast Asia during COVID-19. *International journal of sociology and social policy*, *40*(9/10), 1141-1166.

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). *The Difference Between Emergency Remote Teaching and Online Learning*. EDUCAUSE Review. Retrieved 2021, from https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Hodges, C. B. (2008). Self-Efficacy in the Context of Online Learning Environments: A Review of the Literature and Directions for Research. *Performance Improvement Quarterly*, *20*(3-4), 7-25.

Hodges, C. B. (Ed.). (2018). *Self-Efficacy in Instructional Technology Contexts*. Springer International Publishing.

Honigsfeld, A., & Nordmeyer, J. (2020). Teacher collaboration during a global pandemic. *Educational Leadership*, *77*(10), 47-50.

Horvitz, B. S., Beach, A. L., Anderson, M. L., & Xia, J. (2015). Examination of Faculty Self-efficacy Related to Online Teaching. *Innovative Higher Education*, *40*(4), 305-316.

Hussain, S., & Khan, S. A. (2022). SELF-EFFICACY OF TEACHERS: A REVIEW OF THE LITERATURE. *Multi-Disciplinary Research Journal*, *1*(50), 110-116. https://www.researchgate.net/profile/Md-Hussain-15/publication/358368223_SELF-EFFICACY_OF_TEACHERS_A_REVIEW_OF_THE_LITERATURE/links/61fe2af ca7d76d0f08c01ee4/SELF-EFFICACY-OF-TEACHERS-A-REVIEW-OF-THE-LITERATURE.pdf

Kao, C.-P., & Tsai, C.-C. (2009). Teachers' Attitudes Toward Web-Based Professional Development, with Relation to Internet Self-Efficacy and Beliefs About Web-Based Learning. *Computers and education*, *53*(1), 66-73.

Kisanga, D. H. (2016). Determinants of Teachers' Attitudes Towards E-Learning in Tanzanian Higher Learning Institutions. *International Review of Research in Open and Distributed Learning (IRRODL)*, *17*(5), 109-125.

Kisanga, D. H., & Ireson, G. (2016). Test of e-Learning Related Attitudes (TeLRA) scale: Development, reliability and validity study. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, *12*(1), 20-36. Retrieved from https://www.proquest.com/scholarly-journals/test-e-learning-related-attitudes-telra-scale/docview/1792794731/se-2

Kundu, A., & Ghose, A. (2016). The Relationship Between Attitude And Self Efficacy In Mathematics Among Higher Secondary Students. *Journal of Humanities and Social Science*, *21*(4), 25-31.

Liu, S., Kim, K. J., Bonk, C. J., & Magjuka, R. (2007). What do online MBA professors have to say about online teaching? *Online Journal of Distance Learning Administration*, *10*(2). Retrieved from https://www.researchgate.net/profile/Kyong-Jee_Kim/publication/229018126_What_Do_Online_MBA_Professors_Have_to_Say_About_Online_Teaching/links/0c9605327955ea0cea000000/What-Do-Online-MBA-Professors-Have-to-Say-About-Online-Teaching.pdf

Ma, K., Chutiyami, M., Zhang, Y., & Nicoll, S. (2021). Online teaching self-efficacy during COVID-19: Changes, its associated factors and moderators. *Education and Information Technologies*, *26*(6), 6675–6697.

Marshall, D. T., Shannon, D. M., & Love, S. M. (2020). How teachers experienced the COVID-19 transition to remote instruction. *Phi Delta Kappan*, *102*(3), 46–50.

Nhat Duy. (2019, August 28). *Sĩ số lớp học quá đông sẽ rất khó thực hiện việc đổi mới giáo dục - Giáo dục Việt Nam*. Giaoduc.net. https://giaoduc.net.vn/giao-duc-24h/si-so-lop-hoc-qua-dong-se-rat-kho-thuc-hien-viec-doi-moi-giao-duc-post201654.gd

Oskamp, S., & Schultz, P. W. (2005). *Attitudes and Opinions*. Taylor & Francis.

Pham, H.-H., & Ho, T.-T.-H. (2020). Toward a 'new normal' with e-learning in Vietnamese higher education during the post COVID-19 pandemic. *Higher Education Research & Development*, *39*(7), 1327-1331.

Pressley, T. (2021). Factors Contributing to Teacher Burnout During COVID-19. *Educational Researcher*, *50*(5), 325-327.

Pressley, T. (2021). Returning to teaching during COVID 19: An empirical study on elementary teachers' self efficacy. *Psychology in the Schools*, *58*(8), 1611-1623.

Pressley, T., & Ha, C. (2021). Teaching during a Pandemic: United States Teachers' Self-Efficacy During COVID-19. *Teaching and Teacher Education*, *106*(103465).

Richter, S., & Idleman, L. (2017). Online teaching efficacy: A product of professional development and ongoing support. *International journal of nursing education scholarship*, *14*(1), 20160033.

Robinia, K. A. (2008). Online teaching self -efficacy of nurse faculty teaching in public, accredited nursing programs in the state of michigan. *ProQuest Dissertations Publishing*. http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=2010155029&site=ehost-live.

Schifferdecker, K. E., & Reed, V. A. (2009). Using mixed methods research in medical education: basic guidelines for researchers. *Medical Education*, *43*(7), 637–644.

Semerci, A., & Aydın, M. K. (2018). Examining High School Teachers' Attitudes towards ICT Use in Education. *International Journal of Progressive Education*, *14*(2), 93-105. 10.29329/ijpe.2018.139.7

Shea, P. (2007). Bridges and Barriers to Teaching Online College Courses: A Study of Experienced Online Faculty in Thirty-six Colleges. *Journal of Asynchronous Learning Networks*, *11*(2), 73–128.

Stein, M. K., & Wang, M. C. (1988). Teacher development and school improvement: The process of teacher change. *Teaching & Teacher Education*, *4*(2), 171-187.

Thoonen, E. E.J., Sleegers, P. J.C., Peetsma, T. T.D., & Oort, F. J. (2011). Can teachers motivate students to learn? *Educational studies*, *37*(3), 345-360.

Tomei, L. (2006). The impact of online teaching on faculty load: Computing the ideal class size for online courses. *Journal of Technology and Teacher Education*, *14*(3), 531-541.

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2002, April). The Influence of Resources and Support on Teachers' Efficacy Beliefs. *In the annual meeting of the American Educational Research Association, New Orleans, LA*.

van der Spoel, I., Noroozi, O., Schuurink, E., & van Ginkel, S. (2020). Teachers' online teaching expectations and experiences during the Covid19- pandemic in the Netherlands. *European journal of teacher education*, *43*(4), 623-638.

Wang, D., & Huang, Y. (2022). Internet-Mediated Joint Construction: Engaging Second Language Learners in Synchronous Online Writing Instruction Through ClassIn. *RELC Journal*.

Wang, M., MacArthur, D. A., & Crosby, B. (2003). A Descriptive Study of Community College Teachers' Attitudes toward Online Learning. *TechTrends*, *47*(5), 28-31.

Wolters, C. A., & Daugherty, S. G. (2007). Goal structures and teachers' sense of efficacy: Their relation and association to teaching experience and academic level. *Journal of Educational Psychology*, *99*(1), 181-193.

Yang, C. (2021). Online Teaching Self-Efficacy, Social–Emotional Learning (SEL) Competencies, and Compassion Fatigue Among Educators During the COVID-19 Pandemic. *School Psychology Review*, *50*(4), 505-518.

Yang, C., Manchanda, S., & Greenstein, J. (2021). Educators' Online Teaching Self-Efficacy and Compassion Fatigue During the COVID-19 Pandemic: The Dual Roles of "Connect". *School Psychology*, *36*(6), 504–515.

Yen, T. V. M., & Nhi, N. T. U. (2021). The Practice of Online English Teaching and Learning with Microsoft Teams: From Students' View. *AsiaCALL Online Journal*, *12*(1), 51-57.

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Multimodal Learning

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Abstract

According to Bouchey et al. (2021) global digitalization has dramatically changed the way we learn. These authors claim that digitalization poses a challenge for teaching and learning in 3 ways: The first one is an abundance, or over-abundance of information provided in several forms: audios, videos, texts and multimedia. They state that these new forms of providing information create multiple access points for the learners; the second one is that these diverse modes of obtaining information provide opportunities for both the teachers and the students; and third, the student body is increasingly diverse. Multimodal learning can thus be defined as learning environments that provide elements of instruction in more than one sensory mode (written, auditory or visual). Multimodal learning (MML) provides opportunities for learning that best suit the needs of the learners: learners who are more auditive can access new information in the form of audio files or audiovisual materials; learners who are more visual can access information in the form of graphic materials, or audiovisual materials, and learners that like printed materials can access texts. MML provides chances for learning to people who formerly were considered handicapped, or having special needs, like learners with dyslexia. However, as Bouchey et al. (2021) point out, MML requires a high level of determination on the learner's side: The learner must be able to understand how s/he learns, and also be able to take the challenge of adopting new modes of learning. These results suggest that though MML, provide students a considerably wider variety of learning options, there are drawbacks for students, instructors, institutions, and infrastructure as a whole.

Keywords: Higher Education, Digitalization, Self-directed, Multimodal Learning, Project-Based Learning, Blended Learning

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Introduction

MML enables content to be delivered in multiple forms: as Power Point presentations, videos, audios, text and multimedia. These new forms of knowledge delivery can engage students participate more in deepening the learning process and making sense of the learning objectives. However, there are some challenges to moving from traditional teacher-learner model where the teacher provides knowledge and the students are passive receptacles: MML requires the teacher to shift his or her role from learning designer to learning facilitator (Bouchey et al., 2021). With MML knowledge is constructed both by the teacher-facilitator and the learners. Thus, learning activities are produced "just in time", based on the preferred mode of the learners and taking their preferences into account. "In addition, the use and integration of different modal representations can reinforce ideas and make learning more memorable" (Bouchey et al., 2021, p.38). Furthermore, the multimodal learning platform can be opened to actors in the learning process other than faculty and students, thus making the learning experience more meaningful. This is of special significance for college students who aim to enter the workforce and need other skills apart from the ones provided by college curricula.

MML provides opportunities that did not exist prior to the age of digitalization: students can now access information delivered in their preferred mode, which makes learning more meaningful. Moreover, MML can be used as a supplement to class lectures giving more flexibility to lecturers. Besides, virtual environments provide students with learning opportunities that would be very difficult to obtain in real life. Examples of these are lab simulations and augmented reality. Lab simulations in biology or medicine allow students to learn content without doing harm. Whereas in the past animals were dissected so students could learn anatomy, something that created tremendous suffering but that was justified by some teachers in the name of knowledge acquisition, is nowadays unnecessary, as virtual dissections provide students with the same knowledge as live dissections but without the trauma that hurting a sentient being implies.

Nonetheless, MML presents big challenges to teaching and learning: Creating didactic materials in different modes can be prohibitive in economic terms and time-consuming. For bigger groups, it might prove prohibitive. Another challenge has to do with the faculty, who would have to change to different learning modes and managing technology that not always works. Teachers may also find it difficult to create content in modes other than their preferred ones (Bouchey et al., 2021). But perhaps the greatest challenge is relying on student's motivation and agency to access information provided in different modes.

Other challenges are that MML presupposes that all learners in a group are digital literate. Furthermore, relying solely on digital technologies for delivering learning content might create feelings of isolation in the learners. Thus, MML should be seen as complementary to classroom-based learning and not an alternative to it. Another challenge is that with evolving technology, channels of communication used to deliver knowledge must be regularly evaluated for privacy and security (Bouchey et al. 2021).

Assessment is another area that would necessarily have to change with MML: Traditional methods of assessment have usually been limited to written tests and assignments, first because they are the easiest to deliver, and second, because it is easier for the learner to get feedback from written materials. However, new modes of assessment are needed to evaluate students' competencies through projects and multimedia presentations. Thus, "By reducing

the cognitive load associated with using an unfamiliar or uncomfortable mode, learning and mastery can be more easily conveyed" (Bouchey et al., 2021, p.48). Again, this presents a new challenge to the teacher-facilitator, since s/he must evaluate content that looks different depending on the mode it was presented in.

MML is nowadays used in most learning environments. In fact, blended learning using audiovisual materials has existed long before digitalization. An inherent disadvantage of using MML is overloading the learners with information; another one, that instructors would need ongoing professional development so that they can become multimodal literate (Bouchey et al. 2021).

Self-Directed Multimodal Learning

As Olivier (2020) points out, within the realm of the 4th Industrial Revolution and an augmenting need for equal access to higher education, the concept of self-directed MML has gained importance considerably. Formerly the only mode used to deliver learning content was the written one. However, for some researchers like Wong (2019 as cited in Olivier, 2020) meaning making is multimodal, as it involves signs, gestures, sounds, action, color, alongside 3D objects. While MML has been used in certain disciplines like language learning, where auditive elements are as important as written ones, MML can be adapted to different disciplines (an example mentioned above was virtual labs); however, "it must be contextualized and situated, and this implies in-depth knowledge of the students and their world" (Olivier, 2020, p.8). Olivier (2020) defines learning basically in terms of language and communication, but learning can also be multimodal. For this researcher, it should foster self-direction in students so that these become life-long learners who are resilient in rapidly changing technological settings. For this researcher, multimodality is closely related to self-direction, in that the students obtain knowledge according to their individual preferences. Olivier (2020) suggests that digitalization has enhanced self-directed learning.

Multimodality and Distance Learning

Although correspondence courses have existed long before the advent of digitalization, there has been a great increase of distance learning opportunities provided by colleges and universities. Distance learning has created opportunities for individuals who otherwise, due to job or family responsibilities, would have been excluded from studying at the tertiary level.

As Olivier (2020) states, most institutions deliver learning content through a combination of both presence courses and distance courses. The need for flexibility in knowledge delivery became evident with the COVID-19 pandemic, as schools and universities worldwide were forced to close to prevent contagion. As the need for distance education has increased, so has the need for delivering knowledge through digital channels: "Self-directed MML has a specific role to play within a context of open education and openness in general, as well as transformation of the higher education space" (Olivier, 2020, p.31).

While MML provides students, faculty, and educational institutions with an array of modes of knowledge delivery, learning has to be situated in a real-life context, it has to consider genre requirements and be supported by adequate technologies. Thus "any attempt towards successful self-directed multimodal learning implies appropriate circumstances, effective environments and institutional support" (Olivier, 2020, p.48). However, for MML to be effective, students and instructors must be multiliterate.

Self-directed learning is becoming ever more significant with the ubiquitous digitalization of the 21st century. Nowadays, most HEIs provide a blend of presence and online courses, or, within a course, blended learning (BL), which basically means integrating technology into the educational arena. As Bosch et al. (2020) point out, for BL to deliver the desired outcomes, the blend of didactic materials, the technology to be used and the activities must be carefully planned. BL provides flexibility to the students allowing for learning "any time, any place", which is a great advantage especially for adult education. (Bosch et al. 2020). BL is closely linked with MML, as BL incorporates the use of technology to the learning process.

Some of the approaches used in BL include flipped classroom, cooperative learning, and project-based learning (PBL). The flipped-classroom approach is the inclusion of an online component in a presence module; cooperative learning involves breaking up a group into small teams of students so that they help each other learn, and PBL is a learning method in which real-world problems are used as a means to promote active learning by the students instead of just presenting facts and figures to them.

While for Bosch et al. (2020) BL has a lot to offer, especially in higher education settings, there are some challenges to its implementation. Some of the disadvantages these researchers mention in their study are that students missed the interaction with the instructor; that not all students were motivated to participate in the on-line activities, and that discussions had to be more synchronized to allow for more participation. For instructors, BL proved to be an unfamiliar terrain for instructors who, in some cases, reported a higher workload. Furthermore, some students were reluctant to include social media in their class interactions, as this meant merging their social and academic lives. For institutions, especially in developing countries, incorporating educational technologies implied extra costs. Another problem was posed by unreliable internet connections as well as by insufficient infrastructure.

Conclusion

It can be concluded that, while MML, SDL and BL provide a much broader range of means for learning to the students, there are disadvantages at the student, instructor, institutional as well as at the infrastructure level. While MML and SDL can help disadvantaged students, it can also enlarge the already existing divide between students who have access to the internet and those who do not; students who are digitally literate and the digitally illiterate, and students who are highly motivated for self-study and those who require the supervision of an instructor.

References

Bosch, C., Laubscher, D. & Olivier, J., 2020, 'The affordances of the Community of Inquiry framework for self-directed blended learning in South African research', in J. Olivier (ed.), *Self-directed multimodal learning in higher education (NWU Self-Directed Learning Series Volume 5), pp. 51–92,* AOSIS, Cape Town.

Bouchey, B., Castek, J. & Thygeson, J. (2021) Multimodal Learning, in *Innovative Learning Environments in STEM Higher Education*, Springer Briefs in Statistics, https://doi.org/10.1007/978-3-030-58948-6_3

Olivier, J. (2020) 'Self-directed multimodal learning within a context of transformative open education', in J. Olivier (ed.), *Self-directed multimodal learning in higher education* (NWU Self-Directed Learning Series Volume 5), pp. 1–49, AOSIS, Cape Town. https://doi.org/10.4102/aosis.2020.BK210.01

Designing a Curriculum With Custom and Present Virtual Reality

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Abstract

The pandemic has created many challenges for education. Despite many schools now having already returned to instruction in-person as opposed to the challenge of doing so virtually, many have adapted to the new normal of having hybrid modes of instruction. One of these methods is through VR/AR technology. This paper will discuss how custom VR/AR applications can be used for education; particularly on how to design a curriculum which incorporates pre-selected research areas that can be made by teachers through educational software to be visualised in VR/AR for students to directly experience the areas and how students can also be directed to model these areas as part of their learning. How this and leveraging available resources for learning for common subjects such as Chemistry from seeing 3D visualisations of molecules can create an interactive classroom, whether it be in-person or virtual, would be engaging to students will be discussed and how these experiences can be best adapted to fit such experiences will then be discussed. As part of this, a case study based on the authors' experience will also be included to discuss how a custom VR application based on a research area that students in a course are currently researching the area needed and how it became a core part of the course's curriculum. Finally, the authors will discuss the future of virtual reality for education and how it serves as a solid foundation to build on for creating further interactive curriculums of the future.

Keywords: Adaptive Instruction, Education Models, Hybrid Delivery, Innovation, Multidisciplinary Education

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Introduction

In 1992, sci-fi writer Neal Stephenson coined the term 'metaverse' in describing 3D virtual spaces, which would then go about being adopted as the vision for virtual reality, such as with Mark Zuckerberg's announcement of Meta on 28 October 2021, the new branding of Facebook towards being oriented with the metaverse. With the Covid-19 pandemic present and with trends such as remote learning and online education prevalent due to it, this concept became a more accepted, plausible future to also move towards within our communities. According to Noesgaard et al., the effectiveness of e-learning would be evaluated by the quality of the interaction that is provided and that it should provide a purposeful place to reflect on the practice and have the content customised based on the subject matter. Online education or E-learning has seen many new ways of learning being developed, with many studies focusing on new forms of learning which can bring about the best student engagement.

In the present curriculum, we have seen many institutions start to introduce virtual reality to immerse students in their learning. From its usage in chemistry such as with being able to visualise atoms to getting a walkthrough a particular designated area without having to be there using a virtual reality headset, the use cases range within a multitude of use cases. However, the problem with current implementations is that the experiences that are provided are only generalised; in which instructors have to find resources either on the internet or through what has been used by the school. Oftentimes, the need for a curriculum to be tailored towards the needs of the student requires more custom solutions to be developed. This paper will discuss and explore how instructors can implement custom virtual reality solutions into the curriculum, how students can be engaged to develop such solutions as well to increase their comprehension within their learning experience, and how existing resources can be leveraged to complement these custom solutions as part of enhancing the students' experience.

Literature Review

The considerations of e-learning have been much affected by the emergence of Covid-19. Factors that have been found to affect the engagement of students with the curriculum and hence boosting the effectiveness of the curriculum have been the e-learning efficacy, resilience and the instructional innovation from teachers, as discussed by Ahmed et al. This was also further built on by the findings by Bączek et al. on how e-learning has been less effective than face-to-face learning in increasing skills, especially on courses that normally require IT resources which normally would not be available in the average student's home. From this, customization to the curriculum is needed; with the hybrid learning of today, we need to be ready to build for both in-person and distance learning.

Frameworks for building VR applications for education have been covered in multiple works, such as with Nguyen et al. 's (2017) work in creating learning environments for VR applications within the curriculum. The development of such work for creating a framework for the curriculum was further examined by Paszkiewicz et al. (2021) where the authors detail designing a curriculum for a study of digital circuits. Related work that currently exists showcases the use of VR for the sake of learning VR itself and its prevalence for select use cases but does not discuss a generalised approach of teaching tailored approaches within classrooms that both involve the student and the instructor taking part in the design. This is a crucial area which the paper looks to address and build on what has already worked from the authors' work in proposing the generalised approach.

There have been numerous studies concerning how virtual reality has been used within courses, both for in-person and distance learning. Broman et al. described how VR can be combined with Zoom in teaching chemistry, showcasing how students can develop their spatial ability even from a distance. They detail how visualising structures have helped students grasp a better understanding of them compared to just teaching them through traditional means, with instructors sometimes using terminology that may sound vague if not visualised, such as with usage of the term 'plane' in the context of a subject, which consequently also increases their engagement with the topic. Lu et Al. further expands on this by showcasing how they create a software that can be used for the purposes of remote education in experimental chemistry. Despite the papers' coverage of systems to accommodate for both in-person and distance learning as well as in its contributions in suggesting what to create for it, there is no current coverage of implementing customised learning for specific subject matter within the curriculum, both for teachers and students to design and interact with. This is hence what the paper aims to focus on and aims to propose as a means of tailoring education through the VR experience as part of the overall curriculum.

Methodology

This paper will use a qualitative study employing narrative analysis as an approach to analyse students' responses towards the customised learning proposed by the paper through a case study that puts in place such a system accompanied by gathering quantitative data for the analysis done through surveying students within a classroom. According to Figgou, narrative analysis refers to a cluster of analytic methods for interpreting texts or visual data that have a storied form. This would be appropriate for our study given that VR-based learning should be focusing on the students' experiences, particularly given that much information about this cannot be gained from just statistical data that would have been needed from a quantitative analysis but can still be supported and interpreted based on it while also getting quantitative data to support it.

This data was based on research between 2020 and 2022, the peak years of the pandemic, with the case study being done over a span of January to June of 2022, in which the development of the custom VR application for a curriculum was developed and implemented as part of it. The survey as part of the quantitative element of the research was done in April 2022. We will focus on addressing three themes in this analysis: challenges students currently face as part of distance education with VR, how customised VR applications can address these challenges and the future of such education alongside students' hopes and aspirations of how it will help them in their learning.

The customised application created as part of this research was a representation of a research area in Victoria, Australia, where students could explore the modelled area based on actual terrain data that was obtained. The approaches were later then documented, and the application implemented as part of the curriculum in introducing students who were also doing research within the area to first explore the area without having to be there in-person, which was especially effective given the efficiency of the activity and the restrictions in place limiting research activity due to Covid-19 during that time.

Engagement & Curriculum Embedment

With the use of virtual reality, remote learning provides a sense of community for the students, whereas in person use of VR tools in the classroom allows students to construct a

comprehensive view of the subject. In 2020, Yoshimura and Borst conducted a study that allows students to use VR headsets during their 7 weeks of online sessions. Students who did not experience motion sickness have found the VR learning experience to be useful and engaging since most students were able to perceive the presence of their instructor and peers (Yoshimura and Borst, 2020, p. 3). When comparing different modes of instruction, although students prefer in-person learning slightly better, they prefer VR learning when compared to traditional remote teaching due to engagement (Yoshimura and Borst, 2020). Similarly, some institutes in the United States have already begun to explore the possibilities of conducting classes using virtual reality. A student from University of Pennsylvania who was able to participate in seminars using VR reported that she was able to recall what happened in class better compared to seminars on zoom, and that the virtual reality world makes online learning less detached from real life (Metz, 2022).

Without neglecting students' need for social interaction, customised virtual reality courses can be embedded into the curriculum that transforms rote learning into proactive learning for the mind. To achieve efficiency, the modern way of teaching usually provides core ideas to the students without having them fully absorb the mechanism; this can usually be seen in teaching methods that are standardised test-oriented. But for many subjects that are required for students to earn their degrees, the concepts are abstruse and likely to form in their short-term memory which provides them no sustained benefits. To illustrate, in an article written by Costandi — a neuroscience writer — he talks about how important mental imaging is in the classroom, explaining that it is crucial for students to comprehend what they have learned (2016). Examples of what can be learned better include new vocabularies, computer science, and mathematics, given that the students can visualise in their minds what is happening (Costandi, 2016). Furthermore, in a study conducted by Evagorou et al., after reading the notebooks of several scientists, they have concluded that impactful scientists such as Watson and Crick or Faraday relied heavily on visualisation as scientific evidence for their discoveries (2016). They urge that the aspect of visual data should not be ignored in the teaching of science (Evagorou et al., 2016).

Aside from the benefits in terms of mental stimulation, virtual reality in education also poses the possibility of conducting training sessions in a safer approach. For example, having a practice-customised VR chemical lab session before in-person labs will reduce the rate of students being injured during lab training, helping the students increase their familiarity with the experimental procedure and lessen the use of resources. VR customization in this scenario can be efficient as students can see (as an example of a Winkler titration reaction) the consequences of having an unbalanced stoichiometric ratio for reacted thiosulfate and iodate when compared to literature. Similar practices have been used in medical training during the COVID-19 pandemic by the School of Medicine of the University of Insubria, Italy. 122 medical students were assigned to perform online training sessions that simulate clinical scenarios such as cardiovascular or nephrological cases mentored by an experienced tutor (De Ponti et al., 2020). Although the training sessions were conducted using virtual reality, students still reported 94% positive reviews obtained as feedback for the realistic diagnostic activity (De Ponti et al., 2020). With customised virtual reality and manual practice, most students will be able to bolster what they have learned by practising mentally and physically. The integration of technology can also be exerted on high school students to incite their interest in different disciplines as part of choosing a path for their careers.

In developing a curriculum that integrates VR into it, schools will have to start off their planning by first finding the areas which could potentially use visualisation to help increase

student interaction with the material, as not all material in all subjects would benefit from such visualisation. They must consider three factors in deciding whether to implement VR within a certain topic of a subject: development, interactivity and creativity. With development, students need to be able to develop their understanding and fulfil the learning outcomes based on the material with VR. With interactivity, students need to be able to fully interact with the material in such a way that would have not been possible with just teaching it through traditional means. With creativity, students need to be able to remember the material and understand why things are as such better compared to traditional teaching means more creatively.

After considering which topic to embed the use of VR in, they need to consider where they will find the resources as part of that. This will need them to look for resources currently available for their own subject use case context. This may include online sources, currently available VR headsets (if any), potential partnerships with VR providers, or through working with their local counties based on the venture put out by the country's board of education. They may also have to tap into their own school funds when necessary, in investing into this venture, which requires them to set aside extra budget for this. Therefore, it is crucial for there to be more discussions with boards of education and subsidies to be given by relevant stakeholders for this venture.

With the available material, they need to develop relevant experiences as part of what they aim to teach. With available VR applications, they can do this simply by directly taking applications off the internet or the resources from the school and use them for learning purposes, but if they are for specialised, custom purposes, they need to spend time creating those. As part of this, they need to undertake training on creating VR applications with specific software such as Unity or Unreal Engine and on how to utilise the headsets. Conversely, these training experiences can also be given to students as well, should the needs of the education fit the need for them to learn VR application development skills and that they can remember the material with more ease that way. This would create interactivity and tailored solutions for both the instructor and the student.

As most schools would most likely not have had VR experiences embedded into their curriculum yet, a pilot program would be necessary to see how the experiences have performed. This would involve the teachers putting forward the VR experience within a certain topic and getting students to then fill in a post-experience survey to see how they have enjoyed the learning experience and whether it was more effective for them. Teachers can also track this from comparing the performance of students within their class before and after the VR experiences they had created for their classroom were put in place. This would also allow for continuous improvement of the VR experience within the classroom, as changes can be made continuously and adjusted based on students' suggestions, given that they have to be the ones leading the change as well with how they find the new learning experience has impacted them overall.

Questionnaire

A questionnaire was provided to high school students in grades 10 and 11 who studied in a private international school located in Taiwan during their synchronous online honours chemistry class. In the questionnaire, high school students were asked five questions regarding the use of virtual reality in their learning experience. The questions include whether the students have used any kind of virtual reality in the past, if they have used the technology

for educational purposes, and if personalised virtual reality content would be helpful towards their learning goals. We have utilised a Likert scale for the students to indicate the extent of interest in VR learning, but also include short answers to questions that require elaboration. The use of a questionnaire allows students to participate rapidly and reflectively. It is important to note that before the questions were given to the students, the instructor had given them a demonstrative video of stimulation to hydrogen burning reaction to give them some context of scientific modelling.

Results

In the questionnaire, we have found that while more than half of the individuals have used virtual reality before, none of them have used it for educational purposes (figure 1). In a short answer question on the thoughts of using virtual reality in education, although a few individuals are not entirely sure if the technology will benefit their studies, most of the students are willing to integrate the technology into the classroom in hopes of making the class more interactive. It can be seen from some of their short answer responses:

"Maybe the class will be more interesting [with VR being used in lessons]."
"It's fun and it helps me focus more on [the studying material]."

There are also some students that worry the use of virtual reality may be abused by other students in the classroom:

"Students would probably just mess around."
"I'm sure it might have its usages, although I'm not exactly sure if [virtual reality is] an entirely necessary classroom feature."

Regarding the use of demonstrative videos that reflect what virtual reality can provide, half of the students have found the stimulation to be very helpful for visualising chemical reactions while the other half find it partially helpful (figure 2). When being asked which type of teaching method employed by the teachers would be most helpful to them, most students comply with the use of technology in the classroom but only a few state that immersive teaching methods can be helpful (figure 3). This can be because none of the students have tried virtual reality before, therefore whether this method will aid them in their studies is purely a prediction for them.

Have you used VR before?
16 responses

- Yes, would like to try again.
- Yes, and did not like it.
- No, would like to try.
- No, not interested.

12.5%
25%
62.5%
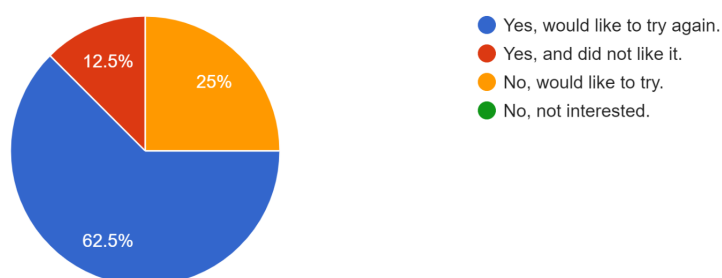
Figure 1. Virtual reality experience. Percentage of students' response to whether they have used any kind of virtual reality in the past, and the degree of interest.

Did the 3D model representation video helped you understand the ideas better?

16 responses
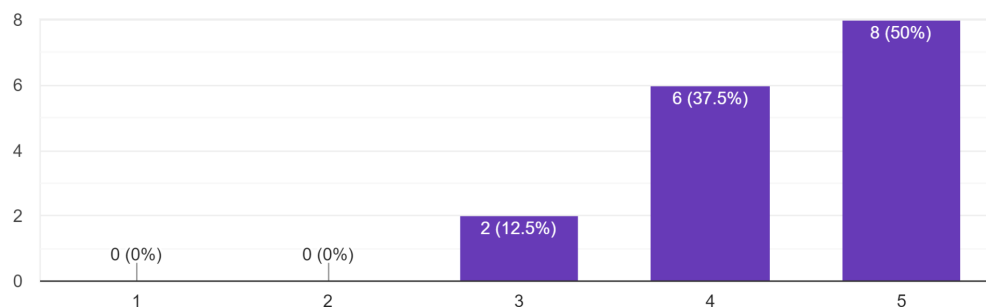
Figure 2. Using demonstrative video for modelling of chemical reactions. The students rank the degree of helpfulness to the understanding of concepts.

Which type of educational methods used by the teachers do you think will be helpful to your learning?

16 responses
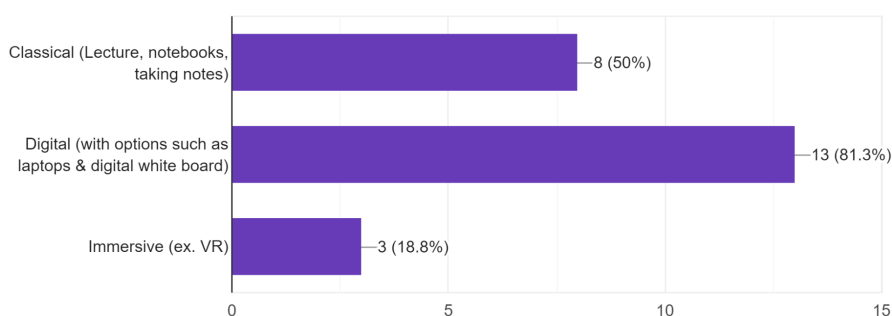
Figure 3. Educational methods. Students state which methods might aid them in learning.

Adding to this, it was also seen that the case study based on the custom VR application created for the purposes of research has been proven to serve as supporting material better suited towards students' interests. As part of a spatial engineering subject, an application was created which aimed to show a section of the area being researched, as there were no currently existing models that would show optimal resolution in this experience. As such, the VR experience was built based on showcasing it as an application, letting students customise their experience as such and instructors to better talk through the area, given that they can experience it in real time.

As part of this process, some informal training was undertaken in order to get a grasp of tooling within Unity, the software in which the application was developed. Terrain data was then collected over the research area to be used for modelling the area within Unity. The custom application was then developed, with a report outlining how it can be used and the intentions of the application. Afterwards, the application and the report were included in an introductory segment of the curriculum of a research subject. Students who have taken the subject have commented that they feel that they have been more prepared for undertaking the research, given that they have seen the area first-hand, albeit it being only virtually at that stage.

Discussion

From the classroom teacher's observation and communication to the researchers, students who have the best grades in class showed a diverging interest in the use of virtual reality in class. Those students are either willing to try or worried that the class discipline will be disrupted. Students who have average grades overall tend to be more enthusiastic about the possibility of using new methods for studying. What this result may reflect is that students with better grades that are less willing to try virtual reality may have already been accustomed to the current learning method and felt that they should employ the same method because they are getting results from it. Students who still have rooms for improvement are generally more receptive to trying out new ways of learning, such as the use of virtual reality. To them, VR may offer them a possibility of obtaining a better grade. Although not applicable to every individual, using virtual reality as a tool may potentially help students develop a new studying method that integrates what they were taught and have imagined. Customised programs will be able to fortify students' weaknesses, leading to a substantial foundation for higher education.

In addition, contemplating the degree of helpfulness of using modelling videos as part of demonstrating chemical reactions (figure 2), it can be hypothesised that if the videos can be introduced to the students using virtual reality, the students will find it to be more helpful because it will allow them to explore the immersive space, size of atoms, and see the chemical reaction as if it is happening concurrently. This hence would achieve the goal of using entertainment as a hook to education (Roepke, 2019).

The qualitative study also shows that students also enjoy getting a more first-hand experience that VR would be able to provide them rather than just theoretical or conceptual knowledge that they would have received from just learning without the practical element. It can also be seen that it is not difficult for instructors to be accustomed to utilising and developing these kinds of customised experiences (if they are unavailable by default), given that they can utilise many online sources as part of their learning as well. Consequently, students can also utilise these same sources and develop solutions of their own as part of their learning, which also enhances their understanding of both the tools necessary and the topics they are learning.

To better understand the specifics of what a learner would perceive as helpful in education and technology, further research and questions need to be asked. This questionnaire is a prelude of how the students perceive the use of technology and if learning with virtual reality has been introduced in the past. For future research, the engagement of customised virtual reality, participation, and whether the resulting product matches students' expectations can be further explored.

Challenges for VR education

Apart from the cost of purchasing virtual reality headsets for the students, the major disadvantage of virtual reality in education is the lack of a standardised curriculum (Fransson et al., 2020). Without a fixed curriculum for the teachers to follow, educators will need additional training and students will need to adapt to the unfamiliar learning experience. Also, in terms of equity and inclusiveness, whether the use of virtual reality should be embedded into the national curriculum or be utilised as a supplemental material should be discussed by the country's board of education, given that there may be differences in resource allocation and funding for different school districts.

Limitations and Future Research

One limitation that the research encountered was that given the lack of VR technology in the school where the quantitative research was performed, students were not able to get hands-on experience on the technology itself which could possibly affect their responses. In general, it is notable that VR technology is still a novel concept in many teaching environments and many do not yet have access to them. This is, however, substantiated with seeing the success students came across with the customised VR solution developed within the university case context.

As a continuation to the studies done in this paper, future research could focus on a longitudinal study focusing on gauging how a curriculum performs when VR is a major part of it over multiple semesters, seeing how its inclusion would affect students' performance compared to the normal curriculum. As with this study, this could be performed on a chemistry subject or any other subject, where there could be substantial benefit with including VR as part of teaching it. This would also further enhance the case for schools to invest more within VR technology to strengthen their students' understanding of the curriculum and to further promote new ways of learning.

Conclusion

From this research, there are clearly many benefits with including custom VR/AR solutions into education curriculums. This is evidenced from the quantitative research demonstrating how students' perceptions towards VR have shown their interest towards the technology and their experience believing that they will find it to work well as part of their education and the qualitative analysis showing how a customised solution has been well received within research. Though there are still many challenges and limitations, including the lack of VR technology available in many schools, there is still much potential for research within the area towards the benefits that including VR in education can bring to students. Towards the future, VR will continue to be a deeply researched area within education, and it is the authors' hopes that this paper will contribute towards getting more researchers to build on this paper towards building more of a case towards making VR technology more accessible to schools, given the clear benefits that it provides towards students' experience within education.

References

Bączek, M., Zagańczyk-Bączek, M., Monika, S., Andrzej, J., & Beata, W.-K. (2021). Students' perception of online learning during the COVID-19: Medicine. *Medicine*, *100*(7). https://doi.org/10.1097/MD.0000000000024821

Broman, K., Chorell, E., & Holmboe, M. (2021). Virtual Reality and Zoom in combination to visualise chemical structures and develop students' spatial ability during the Corona pandemic. *Book of Abstracts: 9th European Variety in University Chemistry Education Conference EUROVARIETY 2021*, p. 60. University of Ljubljana.

De Ponti, R., Marazzato, J., Maresca, A. M., Rovera, F., Carcano, G., & Ferrario, M. M. (2020). Pre-graduation medical training including virtual reality during COVID-19 pandemic: a report on students' perception. *BMC Medical Education*, *20*(1). https://doi.org/10.1186/s12909-020-02245-8

Evagorou, M., Erduran, S., & Mäntylä, T. (2015). The role of visual representations in scientific practices: from conceptual understanding and knowledge generation to "seeing" how science works. *International Journal of STEM Education*, *2*(1), 11. https://doi.org/10.1186/s40594-015-0024-x

Ferrell, J. B., Campbell, J. P., McCarthy, D. R., McKay, K. T., Hensinger, M., Srinivasan, R., … Schneebeli, S. T. (2019). Chemical Exploration with Virtual Reality in Organic Teaching Laboratories. *Journal of Chemical Education*, *96*(9), 1961–1966. ACS Publications. https://doi.org/10.1021/acs.jchemed.9b00036

Fransson, G., Holmberg, J., & Westelius, C. (2020). The challenges of using head mounted virtual reality in K-12 schools from a teacher perspective. *Education and Information Technologies*, *25*(4), 3383–3404. SpringerLink. https://doi.org/10.1007/s10639-020-10119-1

Lin, M. T.-Y., Wang, J.-S., Kuo, H.-M., & Luo, Y. (2017). A Study on the Effect of Virtual Reality 3D Exploratory Education on Students' Creativity and Leadership. *EURASIA Journal of Mathematics, Science and Technology Education*, *13*(7). https://doi.org/10.12973/eurasia.2017.00709a

Lu, Y., Xu, Y., & Zhu, X. (2021). Designing and Implementing VR2E2C, a Virtual Reality Remote Education for Experimental Chemistry System. *Journal of Chemical Education*, *98*(8), 2720–2725. https://doi.org/10.1021/acs.jchemed.1c00439

Metz, R. (2022, January 27). Forget Zoom school. For some students, class is in session in VR. Retrieved May 4, 2022, from CNN website: https://edition.cnn.com/2022/01/27/tech/vr-classes/index.html

Mo Costandi. (2016, June 4). If you can't imagine things, how can you learn? Retrieved May 12, 2022, from the Guardian website: https://www.theguardian.com/education/2016/jun/04/aphantasia-no-visual-imagination-impact-learning

Nguyen, V. T., & Dang, T. (2017, October 1). Setting up Virtual Reality and Augmented Reality Learning Environment in Unity. https://doi.org/10.1109/ISMAR-Adjunct.2017.97

Paszkiewicz, A., Salach, M., Strzałka, D., Budzik, G., Nikodem, A., Wójcik, H., & Witek, M. (2021). VR Education Support System—A Case Study of Digital Circuits Design. *Energies*, *15*(1), 277. https://doi.org/10.3390/en15010277

Roepke, J. (2019, October 5). Solving these 5 issues will make education AR/VR go mainstream. Retrieved May 4, 2022, from VentureBeat website: https://venturebeat.com/2019/10/05/solving-these-5-issues-will-make-education-ar-vr-go-mainstream/

Yoshimura, A., & Borst, C. W. (2020). Remote Instruction in Virtual Reality: A Study of Students Attending Class Remotely from Home with VR Headsets. *In: Hansen, C., Nürnberger, A. & Preim, B. (Hrsg.), Mensch und Computer 2020 - Workshopband. Bonn: Gesellschaft für Informatik e.V.*. DOI: 10.18420/muc2020-ws122-355

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To What Extent Lebanese University Students Consider Themselves as Intercultural Communicators

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Abstract

Globalization has removed all constrained borders and distances among countries, governments, and business corporations. With this fundamental change, there has been an increasing demand for intercultural competent communicators to secure success in the 21st century marketplace. However, some universities in Lebanon, if not all, seem not to have IC as a part of their curricula, or if they do, it is not emphasized. As such, students may not become aware of the importance of developing intercultural communication skills. That's why the researchers aimed to (1) investigate the extent to which students in private Lebanese universities are aware of the importance of IC, (2) whether they consider themselves as culturally competent speakers, and (3) the strategies they follow to develop their intercultural communicative competence (ICC). Using a mixed-methods design, the researchers surveyed 190 participants conveniently sampled from different private Lebanese universities and conducted two focus groups of 5 participants each. The collected data was analyzed quantitatively and qualitatively. The derived conclusions from both analyses were triangulated. The findings revealed that the majority of the participants were aware of the importance of ICC, more than half of the participants considered themselves intercultural speakers, and the strategies that helped them the most in developing their ICC were interactions with people from other cultures, different types of media, and international friends among others. The researchers recommend more attention be given to IC in higher education institutions and further research be conducted in the area of IC using an intercultural communicative competence tool.

Keywords: Cross-cultural Communication, Global Communicators, Diverse Cultures, Higher Education, Intercultural Communicative Competence, Lebanon, Middle East, Workplace

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Introduction

Globalization has removed all constrained borders and shortened distances among countries, governments, and business corporations. With this fundamental change, there has been an increasing demand for intercultural competent communicators to secure success in the 21st century marketplace. In fact, Winstead (2021) states "as more and more company leaders prioritize diversity and inclusion in their workplaces," effective intercultural communication (IC) becomes a must in today's workplaces. This is reinforced by Deardorff (2015, p. 137) when she states that because communicating with customers, partners, and employees across international borders is an everyday activity among many employees worldwide, employers need to find employees "who are not only technically proficient, but also culturally astute and able to thrive in a global work environment". She even stipulates that "it is essential that the tuning community intentionally include intercultural competence as a crucial piece of what today's graduates need to know and be able to do, regardless of discipline" (Deardorff, 2015, p. 137).

Lebanon is a country in the Middle East. Arabic is the native language there, and foreign language learning (FLL) (English and/or French) is considered of high importance at least for instrumental reasons, namely pursuing a higher education degree in the foreign language and securing a job nationally, regionally, or internationally. In fact, FLL begins as early as kindergarten, and almost all subject matters are taught in the foreign language either English or French depending on the learner's choice of which foreign language s/he wants to pursue as the first foreign language.

Lebanon has a cultural diversity reflected in its arts, cuisine, ethnic background, languages, and residents among others, and its geographical location makes it open to the global world, which necessitates having a Lebanese generation with a global mindset and intercultural communicative competence rather than mere imitators of native speakers (Byram, 2008).

However, the researchers have concerns about the intercultural education of the Lebanese students, mainly in higher education, as it is a learning outcome neither in higher education nor in school despite the FL teaching. At its best, a few universities have IC as an elective social science course which some students might take to complete a general education requirement. Besides, not much research has been done in the Lebanese context that explores the extent to which the Lebanese learners have the desired intercultural communication skills needed to transition them successfully into their future multicultural workplace and diverse social environments. To this end, the researchers aimed to investigate: (1) the extent to which students in private Lebanese universities are aware of the importance of IC, (2) whether they consider themselves as culturally competent speakers, and (3) the strategies they follow to develop their intercultural communicative competence (ICC).

Intercultural Competence: Terms and Definitions

Different terms for intercultural competence (IC) were given, namely global competence, global citizenship, global learning, intercultural effectiveness, intercultural dialogue, cross-cultural awareness, international competence, global competitive intelligence, and intercultural communicative competence among others. According to Deardorff, (2015, p.140), these terms are specific to each discipline, or different terms are used for different disciplines. For example, it is referred to as intercultural competence or global citizenship in

education, cross-cultural effectiveness in business, global competence in engineering, and intercultural communicative competence in language learning among others.

No matter what term is used, it is essential one adopts a non-essentialist definition of intercultural communication to avoid cultural differentialism (Tiurikova, 2021). This could be done by adopting a broader definition of culture, that is, not limiting it to a country or ethnicity but rather a framework of reference to a group of people and by incorporating the notion of multiple identities (Tiurikova, 2021, p. 124).

Intercultural competence has been defined differently by different scholars. For instance, Dypedahl (2019) defines it as "mindsets and/or communication styles that are different from one's own" (p. 102). Deardorff (2019) relates IC to "the skills, attitudes, and behaviors needed to improve interactions across difference, whether within society (differences due to age, gender, religion, socio-economic status, political affiliation, ethnicity and so on) or across borders" (as cited in Tiurikova, 2021, p. 125). The Council of Europe (2007) defines IC as "the ability to communicate effectively in cross-cultural situations and to relate appropriately in a variety of cultural contexts" (p. 9), and Byram (1997) defines it as "an individual's ability to communicate and interact across cultural boundaries" (p.7). The top- rated definition among intercultural scholars was "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (Deardorff, 2004, p. 194).

Byram's (1997) definition of intercultural competence was the most applicable to "higher education institutions' internationalization strategies" (Deardorff, 2006, p. 34). That's why the researchers adopted this definition in their research study and used the term intercultural communicative competence used in language learning. To ensure a non-essentialist definition of IC, the researchers adopted the broader definition of culture and the notion of multiple identities.

Research Questions

The following research questions guided this research:

1.   To what extent are university students in Lebanon aware of the importance of intercultural communicative competence (ICC)?
2.   To what extent do the Lebanese private university students consider themselves interculturally competent speakers?
3.   How do they think they have developed their ICC?

Methodology and Methods

The researchers used the mixed-methods design, which incorporates the use of both quantitative and qualitative research methods. This kind of design was selected to get "an expanded understanding" of the research problem (Creswell, 2009, p. 203). The researchers employed the online self-completion questionnaire, which consisted of 5 multiple choice questions and one 5-point Likert scale item, to collect the quantitative data. The researchers complemented that data with two focus- group interviews, each of which consisting of 5 participants, which comprised the qualitative data.

The collected data was analyzed both quantitatively and qualitatively. The researchers used excel to analyze the quantitative data mainly descriptively for overall trends and patterns. As to the qualitative data, the participants' responses, which were not edited by the researchers to maintain the participants' voices, were transcribed and thematically coded. Then the conclusions derived from both analyses were triangulated so that the "findings may be cross-checked" (Bryman, 2008, p.700). The similarities found between these conclusions contribute to the validity of the findings.

The researchers conveniently selected 200 students from private Lebanese universities located in Beirut, Mount Lebanon, and the South to take part in this study, but only 190 returned the online completed questionnaire. These participants were promised confidentiality, anonymity, and non-traceability. They were all native speakers of Arabic and fluent at least in one foreign language either English or French. They were also coming from different regional and socio-economic backgrounds, and they were of different genders and academic statuses as seen in the following table:

	Sophomore	Junior	Senior	Graduate	Total
Female	24	25	31	9	89
Male	27	16	41	13	97
Other	2	1	1	0	4
Total	53	42	73	22	190

Table 1: Crosstabs of Participants' Gender and Academic Status

Findings and Discussion

Participants' Awareness of the Importance of ICC

The majority of the participants were aware of the importance of ICC to them. In fact, more than half of the participants (54.8%) believed that it was very important and about one third of them (33.9%) thought it was important. About 8% considered it somehow important, and few (2.2%) could not decide. Only very few (1.1%) thought it was not important (See Figure 1 below).
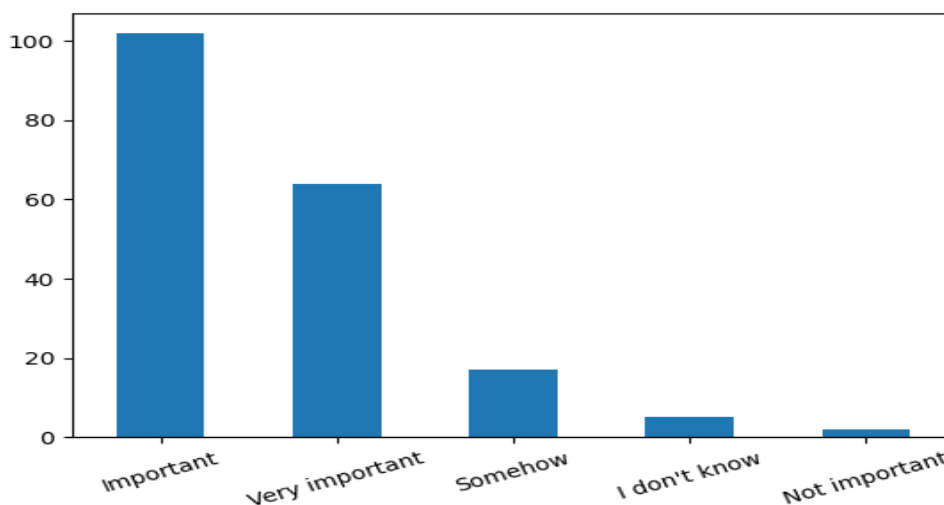

Figure 1: Participants' Awareness of ICC Importance

The qualitative data, which was in line with the quantitative, provided richer data about the participants' awareness of the importance of ICC. Most, if not all, of the participants in the focus groups explained why and how ICC was important to them.

For many participants ICC is important for creating harmony with others, "*It opens for us a new horizon and create a sort of harmony, … we are so open to each other … there is a high chance that we would immigrate or someone would come to us or even on social media so this really helps us understand the human relation better.*" Some participants talked about accepting others and building better relationships as revealed in the following participants' testimonies, *"To feel like accepted," "To have better relationships with others"*, *"It helps us build better relationships and understand these people. It also helps us gain more insight and more knowledge about them and their backgrounds and so on, so it is really helpful"*.

Other participants viewed ICC important because it helped them respect and accept differences, "*learn to accept others who are different*," "*To be understanding of each group and appreciate them to the best of our abilities*," "*I think it is really important to have because in a way it teaches you how to respect differences cuz [sic]we already accept similarities but the fact that you can have a conversation with someone who is different than you it is important and makes you grow as a person in a way.*"

Another participant described ICC importance in terms of increasing his job prospects and preparing him to work in a diverse environment. He clearly stated, "*as a software engineer, my ambition is to work as a consultant at a point. Because this domain is not much as available in Lebanon, then I assume I will travel to work abroad, most probably I will be in the gulf, especially Dubai, which is cosmopolitan. So I need to be ready for such an experience.*"

For other participants, ICC is important in helping them avoid pre-judgement when interacting with the other. For example, one participant stated, "*When I listen to someone's point of view, I don't directly make a judgement. So I try to listen to their opinion and how they view things and at the end I give my opinion trying to convince them with something.*" Similarly, another participant explained "*I possess the quality of not like being judgmental or to have like previous judgement on what they might be like, their culture and the like.*"

In general, most participants agreed that ICC improves their ability to communicate with others. For example, they talked about the following reasons: "*To be able to interact with others*", "*Have effective communication*," "*I would be more knowledgeable if I encountered someone from that culture, I would know how to interact and maybe through like my interactions I would earn that person's respect.*"

The participants' awareness of the importance of ICC aligns with previous studies done by researchers such as Liu (2016), Allo (2018) Allen (2021), Mu and Yu (2021), Halim et al. (2022) among others, who reported about their participants' awareness of the importance of ICC. In addition, the participants' narrated reasons behind the importance of ICC also echo with those found by Halim et al. (2022). Through reflective journals, the majority of their participants talked about the importance of ICC as it helps them build better relationships and develop a more respectful, tolerant and non-judgmental attitude (Halim et al., 2022).

Participants' Perceptions: Intercultural Speakers or Not

About half of the participants (52.2%) consider themselves intercultural speakers. However, about 10% only don't consider themselves intercultural speakers, and more than one third of them (38.2%) can't decide whether they are intercultural speakers or not (see figure 2 below).
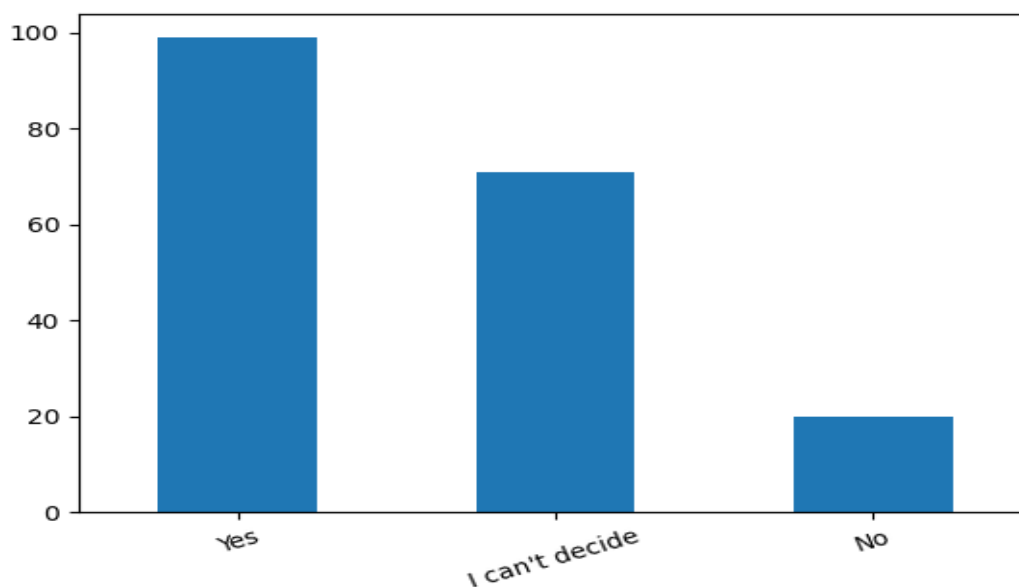
Figure 2: Participants' Perceptions of Being Intercultural Speakers

The qualitative data could clarify and add further insights to these findings. The participants who considered themselves intercultural speakers explained why they thought so. Some of the evidence they reported was about never failing an intercultural encounter before as expressed by one participant who stated, *"I consider myself an intercultural speaker as I never failed to maintain a good interaction with my conversation partner. I used to ask them about their cultures or what is considered offensive in their culture."*

Another proof given by another participant was maintaining appropriate attitude and skill when interacting with diverse people. She said, *"I am a competent speaker because I try to accommodate what they find offensive and what they don't find offensive."*

Avoiding being judgmental, tending to wait and listening objectively to the other are other traits the participants mentioned as proofs for viewing themselves as interculturally competent communicators. One participant narrated *"I am culturally confident because I believe when I interact with someone from another culture I tend like to wait and see how for example they speak or how for example their perspective on some stuff."* Likewise, another participant stated *"I consider myself I fit in that criterion so I don't like to have previous judgement on what they might be like, their culture and the like."* One more participant said, *"When I listen to someone's point of view, I don't directly make a judgement."*

However, some participants lacked awareness of ICC and could not decide whether they are competent or not. For example, one participant who could not decide for herself, said *"I can't decide as I haven't been in an intercultural encounter before."* Another participant said,

"*Honestly, I don't know. I respect other people's beliefs. I don't think I have a problem dealing with them.*" When the interviewer, one of the researchers, probed about the reason why she did not consider herself an intercultural speaker, she replied, "*I can't decide because I don't have any experience in this regard.*" Asking her further about what she thought an intercultural speaker should be like or have, she answered, "*I don't know.*" Also, another participant said "I *don't know*" and when asked about the reason, he replied "*because I don't have experience like every day I experience this.*"

Showing the appropriate attitude and skill when interacting with others, refraining from making hasty judgments, respecting differences are all important qualities to ensure successful intercultural communication. These findings are all in line with the literature (Mirzaei & Forouzandeh, 2013; Liu, 2016; Allo, 2018; Allen, 2021; Mu & Yu, 2021; Halim et al., 2022).

How Participants Think They Developed ICC

In response to the question about how the participants had developed their ICC, the participants selected these strategies in a descending order: 1) interactions with people from different cultures (71.5%), 2) different types of media (63.4%), 3) international friends (55.4%), 4) travel (43%), 5) courses (37.1%), 6) readings (36.6%), and 7) globalization (28.5%) among others that were selected by fewer participants. Figure 3 below provides further information on these strategies.
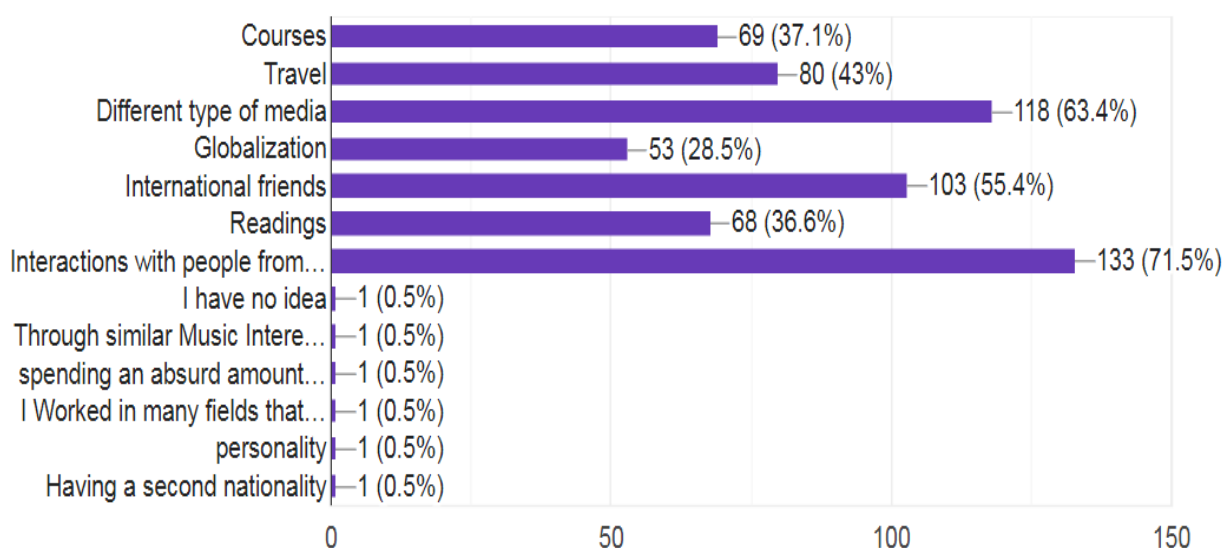
Figure 3: Strategies that Helped Participants Develop ICC

The qualitative data echoed the quantitative data as the participants in the focus-groups named almost the same strategies. The most strategies referred to by the participants were social media as reflected in one of the responses "*Definitely social media comes as number one: Tiktok; twitter; podcasts*" as well as movies and books, "*shows for example, series, sometimes books help me learn about those kind of things…They help you discover the criteria like you should do this and that when interacting with people from different culture.*" Other responses were related to "*Travels*" and "*International friends.*"

Upon probing about how courses contributed to developing their ICC, one of the participants stated that *"I knew nothing about IC until I joined the university and took Intercultural communication course with you. Unfortunately, I was in a public school, and teachers there did barely teach us."* Similarly, other participants from a different institution said *"through courses and discussion with our teachers who kept on referring to it."*

The most named strategies by the participants also match with the strategies presented in previous studies. To name a few, in Allen (2021), for example, the participants named technology, social media, and traveling. Mu and Yu's (2021) participants referred also to social media, TV series, songs and movies. In Halim et al. (2022), the participants named social networking sites, mainly YouTube and WhatsApp, as the strategies that helped them understand the netiquette of communication and the skill of showing respect to others.

Conclusion and Recommendations

In this study, the researchers examined the Lebanese university students' awareness of the importance of ICC, their perceptions of themselves as intercultural communicators, and the strategies they think that helped them to develop ICC. Using a mixed- methods design, the researchers surveyed 190 participants conveniently selected from private Lebanese universities and interviewed ten participants in two focus-groups.

The majority of participants are aware of the importance of the intercultural communicative competence for several reasons related to creating harmony with others, helping them understand and respect others, listening objectively to others, being able to work in diverse workplace contexts, and befriending others. However, a few could not decide and few seemed not to be aware of ICC importance.

Though a lot of the participants consider themselves interculturally competent speakers, quite a number of them cannot decide for themselves, and fewer don't perceive themselves as intercultural speakers. This hints at the probability that the participants are not well-informed about ICC, they do not know how to evaluate themselves due to their lack of experience in intercultural encounters, or even they lack the knowledge, skills, and attitudes of an intercultural speaker.

The most sources that helped them develop their ICC are 1) their interactions with people from different cultures, 2) different types of media, 3) international friends, 4) travel, 5) courses, and 6) readings. These results reinforce the fact that students develop their ICC on individual basis or personal effort related to their social circle, whereas it should have been a part of the learning outcomes they develop in their universities like other universities in European countries. This puts learners coming from lower socio-economic background at a disadvantage.

Because the sample is a non-probability sample, the researchers cannot generalize the findings to represent all Lebanese university students in the private sector. In addition, though the sample comes from different socio-economic backgrounds, participants from the public sector who mostly come from low-socio economic sector are not represented, hence impacting on the generalizability of the findings too. Moreover, the findings reflect the perceptions of the students. Although the different types of data were cross-checked, still the researchers cannot be confident that these perceptions mirror their behavior in real-life intercultural encounters.

Due to these limitations, the researchers recommend that the participants' ICC be assessed using an intercultural communicative competence tool to see to what extent they have the required knowledge, attitudes, skills, and critical cultural awareness of an intercultural speaker as per Byram's (1997) ICC model. In other words, a follow-up study is suggested to investigate the extent to which participants' responses reflect Byram's multidimensional components of ICC. The researchers also recommend that other data collection methods, such as observation and cultural incidents, and a representative sample be used in future research. In addition, the researchers recommend that more attention should be given to intercultural communication in higher education to raise students' awareness about its importance, to be more knowledgeable about what ICC is about, and to ensure equity of exposure among all students.

References

Allen, T. J. (2021). Exploring students' perceptions about intercultural communication education: Rethinking the design and facilitation of a course in Japan. *Intercultural Communication Education, 4* (3), 213-233. https://doi.org/10.29140/ice.v4n3.475

Allo, M.D.G. (2018). Intercultural communication in EFL classrooms: *Ethical Lingua, 5* (2), 159-170. DOI**:** https://doi.org/10.30605/ethicallingua.v5i2.1036

Bryman, A. (2008). *Social Research Methods*, (3rd ed.). New York: Oxford University Press.

Byram, M. (1997). *Teaching and Assessing Intercultural Communicative Competence*. Clevedon, UK: Multilingual Matters.

Byram, M. (2008). *From foreign language education to education for intercultural citizen*. Clevedon: Multilingual Matters.

Chen, R. T. H. (2022). Teaching intercultural Communication in an English as a Lingua Franca Context. *RELC Journal* 0(0), 1-9. DOI:10.1177/00336882221074106

Council of Europe (2007/C287/01). Resolution of the Council of 16 November 2007 on a European Agenda for Culture. Brussels: European Union.

Creswell, J. W. (2009). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (3rd ed.). US: Sage Publications.

Deardorff, D. K (2004). The Identification and assessment of intercultural competence as a student outcome of international education at institutions of higher education in the United States. Unpublished dissertation, North Carolina State University, Raleigh.

Deardorff, D. K (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies of International Education*, *10* (3), 241-266. doi: 10.1177/1028315306287002

Deardorff, D. K. (2015). A 21st century impressive: integrating intercultural competence in Tuning. Doi: 10.1854/*tjhe-3*(1)-2015pp137-147.

Dypedhal, M. (2019). Intercultural Communicative Skills. In T. Burner, C. Carlsen, & K. Kverndokken (Eds.). *101 Ways to Work with Communicative Skills-English Teaching in primary and secondary schools* (pp. 99-112). Fagbokforlaget.

Halim, A., Atikah, D., Rezki, A., Fadillah, F.N., & Astuti, D. (2022). Students reflections on intercultural communicative competence: A case study of EFL Islamic higher education students in Kendari. *International Conference: Transdisciplinary Paradigm on Islamic Knowledge,* KnE Social Sciences, 351-356. DOI 10.18502/kss.v7i810754

Liu, L. L. (2016). An investigation of non-English majors' intercultural communicative competence: Based on a case study of China West Normal University. *Cross-Cultural Communication, 12* (12), 28-34. DOI: http://dx.doi.org/10.3968/9139

Mirzaei, A. & Forouzandeh, F. (2013). Relationship between intercultural communicative competence and L2 learning motivation in Iranian EFL learners. *Journal of Intercultural Communication Research, 42* (3), 300-318. https://doi.org/10.1080/17475759.2013.816867.

Mu., Y., & Yu., B. (2021). Chinese college students' intercultural competence: Current situation, barriers, and solutions. *Journal of Intercultural Communication, 21* (2), 44-57. https://repository.eduhk.hk/en/publications/chinese-college-students-intercultural-competence-current-situati

Tiurikova, I. (2021). Researching intercultural competence in language learners: Gaps between theory and methodology. *Intercultural Communication Education*, *4*(2), 122-136. http://doi.org./10.29140/ice.v4n2.437

Winstead, A. (2021, February 7). The importance of intercultural communication in today's workplace. Retrieved from. https://www.worth.com/the-importance-of-intercultural-communication-in-todays-workplace/

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Liberty, Equality, Fraternity: Trauma-Informed English Language Teaching to Adults

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Abstract

This qualitative paper examines trauma-informed teaching of English as a second language (ESL) to adults. Trauma is highly prevalent worldwide, and post-traumatic stress negatively affects language learning. A review of the literature identified five major principles for trauma-informed learning: safety, agency, a foregrounding of student identities, recognition of strengths, belonging, and meaning. However, very few empirical studies exist in this field, with a dearth of student voice and a lack of trauma-screening of students. Additionally, most published research about anxiety in second and foreign language learning does not critically examine the learning environment. The present study, informed by socio-environmental theories of trauma and critical pedagogies, privileges the voices of ESL students from three universities in Australia. Thirty-nine participants completed a validated tool to measure post-traumatic stress responses, and 20 of these students then took part in semi-structured interviews about the learning environment in their university-based English language centres. Interview questions were based on principles identified in the literature review. Data were analysed through a critical thematic analysis and a trauma-informed lens. For the purposes of this paper, findings are summarised into three major themes: Liberty, equality, and fraternity. The theme of *liberty* encompasses authoritarianism in the classroom, choices, and autonomy. *Equality* refers to teachers treating students equally, and egalitarianism amongst peers. The third theme, *fraternity,* examines supportive teachers and peers, as well as collaborative, interactive learning. Given the current climate of mass forced migration and COVID-19, the findings are timely and relevant for all second language learners.

Keywords: Trauma-Informed, ESL, TESOL, PTSD, Student Voice

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Introduction

Educational institutions are increasingly recognising the link between trauma and learning. Trauma-informed schooling is gaining recognition (NSW Department of Education, 2020), and universities are beginning to implement mental health strategies into their courses and syllabi (Baik et al., 2017). Such initiatives signal an acknowledgement that mental distress impacts learning, and that educational institutions have a role to play in the mental wellbeing of students (Carter, Pagliano, Francis, & Thorne, 2017).

The precise definitions of trauma and post-traumatic stress disorder (PTSD) are a matter of debate. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), psychological trauma is defined as "exposure to actual or threatened death, serious injury, or sexual violence" (American Psychiatric Association, 2013, p. 271). However, broader definitions have characterised trauma as any experience "that impairs the proper functioning of the person's stress-response system, making it more reactive or sensitive" (Supin, 2016, p. 5).

Despite differences in definitions of psychological trauma, and culturally-specific manifestations of post-traumatic stress, the trauma research community generally accepts that PTSD involves a broad pool of biological responses. These include hypervigilance and hyperreactivity, sleep disorders, and physical symptoms (Hinton & Good, 2016). Similar post-traumatic stress responses have been identified across cultures (Silove, Steel, & Bauman, 2007) and "there is growing consensus that PTSD possesses cross cultural validity" (McNally, 2016, p. 122). This is reflected in the DSM-5 being modified from earlier versions to reflect cross-cultural manifestations of trauma (American Psychiatric Association, 2013).

While psychological trauma used to be considered an unusual occurrence (Herman, 1997), this is no longer the case. With approximately 70 percent of the global population having experienced a traumatic event (Kessler et al., 2017), psychological trauma has been called an "epidemic – not only in the world's low and middle income countries" (Fidyk, 2019, p. 54). Only a small percentage of people who have experienced trauma go onto develop post-traumatic stress disorder (PTSD); however, it is estimated that for every 100 people worldwide, there will be 12.9 lifetime episodes of PTSD (Kessler et al., 2017). Populations at greater risk of developing PTSD include women (Australian Institue of Health and Welfare, 2020, July 23), refugees (Knipscheer, Sleijpen, Mooren, Ter Heide, & van der Aa, 2015), and military veterans (Wallace, 2020). It is therefore likely that every second language classroom will contain some traumatised learners.

The effects of trauma on learning and concentration are well established in the scientific literature. Stimuli that recall the original trauma cause a spike in brain activity specific to the trauma (Bryant & Harvey, 1995; Thrasher, Dalgleish, & Yule, 1994; van der Kolk, 2014), causing a flashback. Flashbacks trigger the amagdyla - the part of the brain responsible for detecting fear - thus impeding concentration and speech centres in the brain (Perry, 2006; van der Kolk, 2014). The ability to organize information logically and sequentially is also affected, negatively impacting the capacity to identify cause and effect and to make long term goals (van der Kolk, 2014).

Post-traumatic stress can also affect verbal learning, memory, and concentration (Brandes et al., 2002; Bustamante, Mellman, David, & Fins, 2001; Jelinek et al., 2006; Johnsen & Asbjornsen, 2009; Lindauer, Olff, van Meijel, Carlier, & Gersons, 2006; Vasterling et al.,

2002), all of which play a major role in learning an additional language. Further research has found that the symptom load of PTSD is inversely correlated with the speed of second or other language acquisition (Theorell & Sondergaard, 2004). As post-traumatic responses can fluctuate depending on the environment (Silove, 2013), there is a clear need for educators to provide a learning context that minimises fear and stress for students. Therefore, this research project aimed to answer the following research question:

According to adult students who have experienced trauma and post-traumatic stress responses, what constitutes a positive English as a second or additional language (ESL) learning environment?

Overview of the Literature

Despite the prevalence of trauma, the trauma-informed classroom is an under-researched area. This brief overview outlines second or foreign language anxiety, trauma-informed second language teaching, and presents themes from the wider literature on trauma-informed principles and teaching marginalised groups.

Learner affect and second language anxiety

Research in teaching English as a second or other language (TESOL) and second language acquisition has been critiqued for its lack of relevance to classroom practice (Kramsch, 2015; Maley, 2016; McKinley, 2019; Medgyes, 2017; Reagan, 2005; Rose, 2019; VanPatten, Williams, Keating, & Wulff, 2020). In the cognitivist studies that often predominate, learners are characterised as language-processing computers with little attention paid to the learning environment (Atkinson, 2011; Pennycook, 2001).

Similarly, learner affect has generally been treated as an individual variable in language learning, along with other factors such as personality, intelligence, and motivation, (Khasinah, 2014; Thurman, 2018). These are presented as immutable rather than fluid states that are subject to change depending on the environment and the nature of interactions with others. Anxiety, for example, has been characterised as a "psychological variable" (Dewaele, 2017, p. 70), or "learner trait" (Dikmen, 2021).

Many other explanations for second language anxiety highlight individual or cultural pathologies rather than seeing it as an outcome of the learning environment. Second language anxiety is attributed to cultural traits (Woodrow, 2006), perfectionism (Dewaele, 2017), neuroticism (Dewaele, 2013; Şimşek & Dörnyei, 2017), or other deficits located in the individual (King & Smith, 2017; Oxford, 2017; Şimşek & Dörnyei, 2017; Sparks, Ganschow, & Javorsky, 2000).

As a result, studies about second language anxiety tend not to focus on the role of teaching. Instead, they concentrate attention on its prevalence, physiological effects, impact on learning, correlation with personality traits and learner beliefs, and the individual coping mechanisms employed by students (Dewaele, 2013; Dewey, Belnap, & Steffen, 2018; King & Smith, 2017; Şimşek & Dörnyei, 2017; Woodrow, 2006) (see also Dikmen, 2021 for a systematic review; McIntyre, 2017 for an overview). Where strategies for teachers are provided, they sometimes involve brief general advice to create a supportive classroom environment (Dewaele, 2013; King & Smith, 2017; Thurman, 2018).

More often, however, strategies are divorced from TESOL pedagogy. Recommendations for teachers involve encouraging students to be responsible for their emotions via relaxation techniques (Oxford, 2017; Woodrow, 2006), cognitive behavioural tools (King & Smith, 2017; Oxford, 2017), exposure therapy (Oxford, 2017), social skills training (Oxford, 2017); and various positive psychology techniques (Oxford, 2016, 2017; Thurman, 2018). These strategies place anxiety and affect within the personal responsibility of language learners rather than seeing them as a product of the teaching and learning environment. Moreover, they do not specifically address psychological trauma, an extreme form of stress.

Trauma-informed second language teaching

The body of literature that specifically addresses ways that teachers can mitigate trauma in the second language classroom is mostly theoretical, or synthesises existing knowledge. Only a small number of published papers on trauma-informed second language teaching include empirical, primary research in their methodologies (Gordon, 2015; Holmkvist, Sullivan, & Westum, 2018; Ilyas, 2019; Louzao, 2018; McPherson, 1997; Montero, 2018; Tweedie, Belanger, Rezezadeh, & Vogel, 2017; Wilbur, 2016).

Of these studies, findings varied somewhat depending on the data source. Teachers and cultural support workers recommended the use of fun and humour (Holmkvist et al., 2018; Ilyas, 2019; Wilbur, 2016); empathy and approachability rather than authoritarian teaching (Holmkvist et al., 2018; Ilyas, 2019; Louzao, 2018); holistic support for students (Ilyas, 2019; Tweedie et al., 2017); embedding health topics in the syllabus (Wilbur, 2016); using relaxation or mindfulness activities (Wilbur, 2016); and teaching vocabulary related to emotion (Tweedie et al., 2017) or political struggle (Montero, 2018). Mental health workers recommended art, music, and physical movement in the syllabus, and avoiding discussions of family (Gordon, 2015). Students emphasised the importance of caring, supportive teachers who listened to students (Louzao, 2018); and asked for low pressure classes (McPherson, 1997).

The studies above are subject to methodological limitations. None used a validated screening instrument to measure the post-traumatic stress of participants; Louzao (2018) used the Adverse Childhood Experiences (ACE) Survey, while the remaining studies classified students as traumatised on the basis of refugee background, experiences of war or trauma (Holmkvist et al., 2018; Ilyas, 2019; Montero, 2018; Tweedie et al., 2017; Wilbur, 2016), or if they displayed behavioural indicators of PTSD (McPherson, 1997). Only three studies (Louzao, 2018; McPherson, 1997; Montero, 2018) included significant student voice, and of these, only McPherson (1997) and Montero (2018) studied adult learners. Findings that answered the research question above are therefore limited.

Due to the small number of empirical studies, the literature review was broadened to include theoretical and review articles on trauma-informed second language teaching (Durish, 2012; Finn, 2010; Horsman, 2004; McDonald, 2000; Nelson & Appleby, 2015), research on environmental factors affecting post-traumatic stress (Herman, 1997; Silove, 2013), and literature on critical pedagogies (Freire, 1996; Smyth, 2011), which aim to empower traditionally marginalised students. From this combined body of literature, a number of themes emerged. These were: a safe and secure environment; agency and choice; a foregrounding of student identities; recognition of strengths; social belonging; and meaning.

Methods

To overcome the limitations of existing studies in trauma-informed second language teaching, the present study was designed to privilege the perspectives of students. It also used a validated tool to measure post-traumatic stress. The theoretical framework combined socio-environmental theories of psychological trauma (Herman, 1997; Maercker & Hecker, 2016; Maercker & Horn, 2013; Perry, 2006; Silove, 2000, 2005, 2013) with critical approaches to education (Cooke, 2006; Emdin, 2016; Freire, 1996; Giroux, 1997; Kincheloe, McLaren, & Steinberg, 2014; Pennycook, 1990, 2001; Smyth, 2011; Zinn & Rodgers, 2012). These theoretical stances are applied most often in the examination of traditionally marginalised populations who have been subjected to 'othering' narratives. These perspectives share a lens that shifts the pathology and burden for change from the individual to the social environment. They also stress empowerment and a voice for those who traditionally have the least power in both mental health and education: the person experiencing mental distress and the student, respectively.

After gatekeeper permission was obtained, participants were recruited from three universities in Queensland, Australia. Eligible participants were 18 years or older, had at least an intermediate level of English, were studying or had recently studied an English language course at a participating university, and had signed informed consent. Ethical clearance was granted by the University of Queensland's Human Ethics Committee. All participants were provided contacts for support services in case of psychological distress. None reported distress as a result of participation.

Data collection was conducted between June 2019 and January 2021, and was divided into two stages. In the first stage, 39 participants completed the PTSD Checklist for DSM-5 (PCL-5), a validated tool for measuring post-traumatic stress (Weathers et al., 2013)(See Appendix 1). The PCL-5 was chosen for its accessible level of English, ease of administering, and cross-cultural validity (Ibrahim, Ertl, Catani, Ismail, & Neuner, 2018; Kruger-Gottschalk et al., 2017; Lima et al., 2016; Sadeghi, Taghva, Goudarzi, & Rah Nejat, 2016). A glossary was provided for a small number of words. Test-takers were not asked to disclose the source of their trauma, thus avoiding possible triggering of post-traumatic stress responses. Pre-COVID, participants completed the PCL-5 in person, but from April 2021, it was administered online. Possible scores in the PCL-5 range from 0 to 80, and a score of 31 and above are considered to indicate the likelihood of PTSD (National Center for PTSD, n.d.).

In Stage 2, 20 of the 39 participants undertook semi-structured interviews about the learning environment at their English language centre. This was partially a convenience sample, though efforts were made to ensure a gender balance and range of backgrounds. Two of the universities involved in the study accepted only full-fee paying international students into their ESL programs, while the third also accepted domestic students from immigrant and refugee backgrounds. Demographic information and PCL-5 scores are provided in Table 1. Interview questions were based on the principles identified in the borader literature review (see Appendix 2).

I transcribed the interviews verbatim and, to preserve the authentic voices of participants, did not alter grammatical errors. I removed hesitation devices and fillers that impeded flow or comprehensibility. Data were coded manually, following thematic analysis protocols established by Braun and Clarke (2006), who advocated an inductive process Themes were

ascribed based on their "repetition, recurrence, and forcefulness" (Lawless & Chen, 2018, p. 2) and analysed for "power relations, status-based hierarchies, and larger ideologies" (Lawless & Chen, 2018, p. 13). They were also analysed through a trauma-informed lens.

Findings

For the purposes of this paper, and in the spirit of the Paris Conference on Education, the findings are divided into three major themes: Liberty, equality, and fraternity. 'Liberté, égalité, fraternité', is not only the national motto of France, but a summation of core democratic values (Day, 2021). Fortuitously, these universal principles align closely with the findings of this study. In the context of this paper, *liberty* refers to the freedom "to do anything that does not harm others" (Elysee, n.d.); providing choices; and building agency and autonomy. *Equality* refers to egalitarian relationships in the classroom, and *fraternity* refers to collaboration, support, and interdependence.

Liberty

Under the umbrella of *liberty,* participants of the study reported their attitudes to controlling teachers, choices, and the development of English language autonomy.

 Although most - if not all - participants came from teacher-centred educational traditions, they discussed feeling "motivated", "more relaxed", "free", and "comfortable" in a less authoritarian classroom. While they agreed with classroom rules that helped them develop their English or involved respecting others, in general they did not want to be controlled.

> For my personality, I don't want someone to control me. [S7]
>
> I don't like to have some restrictions to students. [S8]
>
> [The teacher] was very, very controlling, I think. But didn't work. No. It didn't work at all. [S39]

They stated that when teachers treated students in an authoritarian manner, this was infantilising and risked disengaging them.

> They used to deal with students more like high school students than university level students. And it's so bad because sometimes you have students who are PhD students. Like imagine! They are not kids to deal with them like that. "Stop talking" or "I'm talking!" "Don't use that, don't do this!". So these rules are so funny because you're not at school. [S36]
>
> When he get angry then that's the problem, because you feel like you are just a kid, or you just feel you're weird. […] If he is angry then you're not happy in the class. If you're not happy, you won't understand anything or you won't listen. [S38]

In addition, participants reported that teachers often punished students without considering the wider circumstances of the situation.

> It could be for I'm asking him something related to the class, not outside things, not like joking or something. Not like I'm being like a naughty student. [S38]

A better response, according to participants, was for teachers to approach infractions by seeking to understand the reasons.

> When someone wanted to talk, [she] would stop and listen to us, what we were saying. This is far better than what [another teacher] was doing. So [she] wanted to understand what we are talking about. [S38]

While providing choices is often considered a keystone of trauma-informed principles (Elliott, Bjelajac, Fallot, Markoff, & Reed, 2005)), participants in this study offered a more nuanced view. Many reported not wanting to have to decide certain matters, such as seating arrangements or co-creating the syllabus. Having too many choices in supplementary learning materials was also seen as overwhelming by some participants.

> Our teachers just provide us with many websites and many resources. I just don't know how to pick them. […] I know they just want to provide as much as they can and they hope we can make good use of them, but actually it's hard for me to make a choice. [S8]

However, participants emphasises that they wanted to have decision-making capacity for large decisions, such as choosing group members for an assignment, or being able to negotiate a change in class or level.

> You can change your class and if you feel not comfortable with the level you are in you can meet the manager and decide with him. […] they give us choices and that is comfortable for me. If I didn't like the teacher or something I can change it. [S1]

Choices in assessment topics were also considered very important for empowering students, as it served to reduce their stress levels and increase their confidence.

> Choices are really important because it gives students an opportunity to do what they feel comfortable with and work and put their effort to do what they need to do. [S40]

> I remember clearly that [teacher] told us any topic we can choose related to this speaking, so I found it very helpful, because I am very nervous person so I can choose a topic that is related to me. [S28]

Another aspect of liberty is autonomy. Participants described how effective teachers helped to build the English language autonomy of students. The first way they achieved this was by scaffolding learning and teaching in a clear and structured way. According to participants, failure to do this led to students having to either be dependent on the teacher or seek information elsewhere.

> If it was easy to understand, we didn't have to go to her and ask questions and "What do you mean, or what was that about? What is this about?" So we just had to constantly [ask her for help] […] and then she could say the final word and then she could [say], "Yes, it's because of me, it's because I told you to do this, you did it, and you succeed." It's not because you were smart enough, you're capable to do it on your own. [S39]

I was not asking a lot of questions, because I was feeling like, he won't understand me […] I feel like I just better stop and maybe do it with the students or my phone. [S38]

Another aspect of building agency was providing encouraging feedback, which gave students more confidence to express themselves in English.

They just give us so much courage if we made a progress. Especially when you're writing., and they [say] "Oh, you made a mistake last time but you didn't do it this time. That's good!" Yeah so, when people feel encouraged, they just do better and they just work harder to improve themselves. [S8]

It make us feel like you are doing it right, we are moving in the right way. That's all. And that's what you need, isn't it? You gotta keep moving forward. So you gotta feel like "Yes, you're doing right. That's it, let's keep on going." [S39]

When I hear something, "Yeah, you have done well on that", the motivation goes up, I want to do more. It makes me feel "Yeah, I can do that. If I did that, I can do more, I can do better, I can do more than that!" [S40]

Finally, participants reported that familiar thematic content in courses increased their sense of agency. This content gave students the knowledge and confidence to communicate in English.

In Japan I had some opportunity talk about my [research] in English so yeah, it's very common for me to speak the scientific topic. So it's easy, more than daily conversation. [S6]

They talk a lot daily topic we can learn or use to our daily life. They much more useful especially for the beginning English learning student. […] I think because in that way I think I'm related to topic and I can give better answers [S7]

When there are no words to speak, I get stuck without speaking and I struggle to speak a lot. So when it's familiar to me I can speak a lot about my job and job environment in my country. [S23]

Equality

Within the theme of equality are findings around teachers treating students equally, and egalitarianism between peers. Participants noted that singling out students for shame in front of their peers – especially for errors – was particularly stressful.

I feel bad because everybody look at me and my friend. [S4]

If your name be written on the board there are two reasons. One is you are really excellent, the other one is you are bad student. […] You don't behave well. So your name is written on the board. Mostly the second situation happens a lot. So when the teacher wrote my name on the board I felt really frustrated. Frustrated, yes. So I tell her I don't feel good, I feel really bad. [S10]

They also stated that it was important for teachers not to single out particular cultures.

> The teacher keep telling us that Indian people are smart, Indian people… like that. And then we – other people who were not Indian - were not feeling OK, we were a bit upset about it. Like other people are not smart. [S40]

Significantly, participants reported that egalitarianism between students enhanced their learning experiences. This had two aspects: being treated equally from a social perspective, and having the same level of English as their classmates. Despite many participants having professional careers and high levels of education, they instead emphasised their common identity as language learners.

> I think, when I'm going to a classroom, we all the same, even if I am sitting with the Prime Minister. At that specific time, we are the same because we are all lacking for the same kind of knowledge. [S21]

Having a similar level of English also made students feel safer and more confident in class.

> I think at first I hesitated a little bit like, "My English is not good, what can I do? How can I interact with teachers? Oh, I think I'm not going to make it." I was very nervous at that time, but everyone is same as me. So, I feel that relaxed and safe. [S28]

> In Saudi Arabia they put high level students with the low. All of them in one class, like stairs. And that doesn't make me feel comfortably. I was very stressful when that happened. […] But in this level, all of the students are the same. The same range. [S1]

A sense of equality, therefore, was represented in terms of cultures being equally valued, not standing out from classmates, having a shared identity as English language learner, and having a similar level of English.

Fraternity

A recurring theme in the findings was the positive impact of supportive teachers and peers. This involved others demonstrating care, and the benefits of collaborative approaches to learning.

Overwhelmingly, participants characterised teacher care as showing patience, attentiveness, and understanding.

> They interact with you in a good way. They feel you have something to say. [S1]

> It started with being kind, respect, and the teaching style. I was really feeling comfortable to continue with my studies. [S40]

This led to student confidence and motivation, both of which enhanced learning.

> It was so easy for me to ask questions, even if it's not right […] I will feel confident because the relationship just gives you confidence to ask whatever you want, even if it's wrong. [S38]

I tell myself I need to do better because they care me so much, and then I shouldn't let them down. [S8]

Teachers who cared about students' lives outside the classroom also contributed to a positive learning environment, according to participants.

Every 2 weeks my teacher, after the class leave, she sit with me and ask me about my experience, how I feel, what I usually do on the weekends and she try to give me advice to do things, like activities in [city]. And actually, I shocked and I was happy with it. [S1]

They always notice the difficulties of the students and they are always there to help us. Once [during COVID] there were no rice at the supermarket, our teacher promised me to bring me some rice […] I have no words to say thanks to her. [S23]

Participants reported that peer collaboration was also a significant part of a positive learning environment, and teachers facilitated this by making tasks interactive and cooperative. Setting tasks which involved students sharing their culture with their classmates motivated them to communicate and share knowledge.

As an African student I really feel enthusiastic sharing experiences about African tradition. [S21]

It gave me a chance to reflect my culture, to tell about my country. [S38]

We know very well that people from different backgrounds are really proud of their culture and they always want to share something from their culture. [S36]

In turn, this led to mutual understanding and respect, which enhanced students' sense of acceptance and belonging, freeing them up to learn.

They are always friendly to me. And they try to ask me as many questions about my culture, about me. And that's make me comfortable with them, to talk to them. They will not judge me because something or they judge me because my religion or anything else. [S1]

When they respect our culture, we don't feel any stress. We can do our learning in a free environment where we are free to speak and free to do things, free to learn well. [S23]

Last time when I expressed about my country cultures, everybody was wondering, so that makes me really interested and happy. "Oh, they know about our culture, they felt that it is good", so that really helped me. And yeah, that really helped me to build connection between each other. [S28]

I feel like being acknowledged, being respected and it's make me feel like I am being valued too. [S40]

Collaborative learning with peers subsequently led to synergistic knowledge.

> If we become a group it will be a very good, like coming together, it's fit together. […] You can understand the group, you can learn something from it. [S1]

> Maybe if you work alone, you can only have your own ideas but if you work in groups, there are many different ideas which maybe you never work out before. So they can show about how they study, how they learn, and you can also get some help from it. […] And you know when friends get together, they will do a thing better. [S8]

> When we were learn together, I think we can improve our knowledge by talking to each other, learning with each other. I think it's better to be like a group and learn. [S23]

Despite participants being more used to educational models that de-emphasised peer collaboration, they overwhelmingly stated that interactive learning with their classmates helped both their wellbeing and their learning of English.

Conclusions

This paper has presented findings of a qualitative study on trauma-informed English as a second language teaching that privileges student voice. As such, it provides new insights into what helps and what hinders learning from the perspective of students. As part of the methodology, participants reported significant variations in post-traumatic stress. However, there were no significant differences in how they perceived a positive learning environment. Therefore, this confirms the benefits of trauma-informed instruction to all learners (Holmkvist et al., 2018). Just as liberty, equality, and fraternity are human values, trauma-informed teaching is for all humans (Wilson, 2022), and should be best practice in every second language classroom.

 As a result of the findings presented here, a number of implications emerge.

- The wellbeing of students should not be compartmentalised and is not just the purview of 'Health & Wellness sections' of university-based English centres. Participants reported that emotional nourishment and wellbeing came from teachers and classmates rather than from formal counselling services, though these were readily available.

- Students do not want transactional teaching. Teaching a second language is not about transmitting the mechanics of grammar and vocabulary in a decontextualised, technical, and dehumanising way. Students are not language learning devices, and they highly value personal engagement from teachers.

- Classroom relationships and teaching style make the most difference to learning environment, according to students.

- Students should not be subjected to hierarchical systems that infantilise them and disrespect their status and autonomy as adults.

In accordance with the student-centred focus of this paper, I will end with a quote from one of the study participants that encapsulates the principles of liberty, equality, and fraternity, and sums up – albeit in an earthy style – the impact of equitable and inclusive teaching.

[The teachers] value all of our interactions. Even if you said, let's say, just shit, they try to take the positive part of that. And by allocating us to work groups randomly, with no strict rules, it also makes us feel that we are equal. So there is no impoverished people in the classroom. There is no wealthy people in the classroom. There is no high and lower society, so we can just mix together and learn. [S21]

ID	Nationality/ethnicity	Gender	Age	Student status	PCL-5 score
1	Saudi Arabian	M	22	International	29
4	Thai	F	33	International	23
5	Taiwanese	F	28	International	8
6	Japanese	M	25	International	31
7	Hong Kong	F	28	International	34
8	Chinese	M	19	International	25
10	Taiwanese	F	20	International	16
11	Japanese	F	32	International	14
13	Chinese	F	27	International	15
19	Sri Lankan	M	47	International	30
21	Mozambiquan	M	30	International	21
22	Thai	F	27	International	23
23	Sri Lankan	M	52	International	10
28	Nepalese	F	19	International	47
35	Japanese	M	25	International	26
36	Kurdish	F	28	Domestic	25
37	Congolese	M	25	Domestic	11
38	Eritrean	M	24	Domestic	10
39	Brazilian	M	39	Domestic	9
40	South Sudanese	F	32	Domestic	16

Table 1. Demographic Information and Post-Traumatic Stress Scores of Study Participants

Acknowledgements

Appendix 1

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	Not at all	A little bit	Mode- rately	Quite a bit	Extre -mely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behaviour, angry outbursts, or acting	0	1	2	3	4

aggressively?					
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

PCL-5 (14 August 2013) National Center for PTSD

Appendix 2

Interview Schedule

1. What do you think is a good environment for learning English?
2. Do you feel safe and relaxed learning English at [university name]? Who or what makes you feel safe? How does this affect your feelings about your classes? How does it affect your learning?
3. Does anyone or anything make you feel scared or stressed at [university name]? How does that make you feel about your classes? How does it affect your learning?
4. Does your English class have many rules? Who makes the rules? How does that make you feel about your classes? How does it affect your learning?
5. Do you have many choices about how and what you study? How does it affect your learning?
6. Do you feel that your teachers and other staff at [university name] respect your culture and the other language(s) you can speak? How does that make you feel about your classes? How does it affect your learning?
7. In your classes, you use learning materials such as textbooks and videos. Do these tell stories about people from your culture? Do you feel these texts respect your culture? How does this make you feel about your classes? How does it affect your learning?
8. Do you feel your teachers and other staff respect your life experience and your skills? How does that make you feel about your classes? How does it affect your learning?
9. Do you feel that your teachers notice the things you do well in English? Do they tell you when you are improving? How does that make you feel about your classes? How does it affect your learning?
10. Do you feel that your teachers and other staff at [university name] care about you? Do they try to make everybody feel welcome? How does that make you feel about your classes? How does it affect your learning?
11. Do you feel that your classmates care about you? How does that make you feel about your classes? How does it affect your learning?
12. Do you feel like your teachers and other staff really listen to you? How does that make you feel about your classes? How does it affect your learning?
13. Do you feel like the topics you talk about and read about in class are important to you and your life? How does that make you feel about your classes? How does it affect your learning?
14. Living in a different country like Australia can be good and bad. Do you think that your teachers and other people at [university name] understand how it feels to come to a new country with a different culture and different language? How does that make you feel about your classes? How does it affect your learning?
15. Has anything else at [university name] made it easier for you to learn English?
16. Has anything else at [university name] made it more difficult for you to learn English?

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Atkinson, D. (2011). Introduction: Cognitivism and second language acquisition. In D. Atkinson (Ed.), *Alternative approaches to second language acquisition*. Retrieved from https://ebookcentral-proquest-com.ezproxy.library.uq.edu.au/lib/uql/detail.action?docID=668755

Australian Institue of Health and Welfare. (2020, July 23). Stress and trauma. Retrieved from https://www.aihw.gov.au/reports/australias-health/stress-and-trauma

Baik, C., Larcombe, W., Brooker, A., Wyn, J., Allen, L., Brett, M., . . . James, R. (2017). *Enhancing student mental wellbeing: A handbook for academic educators*. Retrieved from unistudentwellbeing.edu.au

Brandes, D., Ben-Schachar, G., Gilboa, A., Bonne, O., Freedman, S., & Shalev, A. (2002). PTSD symptoms and cognitive performance in recent trauma survivors. *Psychiatry Research, 110*(3), 231-238.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:10.1191/1478088706qp063oa

Bryant, R. A., & Harvey, A. G. (1995). Processing threatening information in posttraumatic stress disorder. *Journal of Abnormal Psychology, 104*(3), 537.

Bustamante, V., Mellman, T. A., David, D., & Fins, A. I. (2001). Cognitive functioning and the early development of PTSD. *Journal of Traumatic Stress, 14*(4), 791-797.

Carter, M. A., Pagliano, P., Francis, A., & Thorne, M. (2017). Australian university students and mental health: Perspectives from the literature. *International Journal of Innovation, Creativity and Change, 3*(3), 1-25. Retrieved from https://www.ijicc.net/images/vol3iss3/1CarterPaglianoFrancisThorne.pdf

Cooke, M. (2006). "When I wake up I dream of electricity": The lives, aspirations and 'needs' of adult ESOL learners. *Linguistics and Education, 17*(1), 56-73. doi:10.1016/j.linged.2006.08.010

Day, J. (2021). Liberté, Égalité, Fraternité: The meaning and history of France's national motto. Retrieved from https://www.liberties.eu/en/stories/liberte-egalite-fraternite/43532

Dewaele, J.-M. (2013). The link between foreign language classroom anxiety and psychoticism, extraversion, and neuroticism among adult bi- and multilinguals. *The Modern Language Journal, 97*(3), 670-684. doi:10.1111/j.1540-4781.2013.12036.x

Dewaele, J.-M. (2017). Are perfectionists more anxious foreign language learners and users. In C. Gkonou, M. Daubney, & J.-M. Dewaele (Eds.), *New insights into language anxiety* (pp. 70-90). Retrieved from https://doi-org.ezproxy.library.uq.edu.au/10.21832/9781783097722

Dewey, D. P., Belnap, R. K., & Steffen, P. (2018). Anxiety: Stress, foreign language classroom anxiety, and enjoyment during study abroad in Amman, Jordan. *Annual Review of Applied Linguistics, 38*, 140-161. doi:10.1017/s0267190518000107

Dikmen, M. (2021). EFL learners' foreign language learning anxiety and language performance: A meta-analysis study. *International Journal of Contemporary Educational Research*, 206-222. doi:10.33200/ijcer.908048

Durish, P. (2012). War, trauma, and learning: staying present in the classroom. In S. Mojab (Ed.), *Women, war, violence and learning*: Routledge.

Elliott, D. E., Bjelajac, P., Fallot, R. D., Markoff, L. S., & Reed, B. G. (2005). Trauma-informed or trauma-denied: Principles and implementation of trauma-informed services for women. *Journal of Community Psychology, 33*(4), 461-477. doi:10.1002/jcop.20063

Elysee. (n.d.). The declaration of the rights of man and of the citizen. Retrieved from https://www.elysee.fr/en/french-presidency/the-declaration-of-the-rights-of-man-and-of-the-citizen

Emdin, C. (2016). *For white folks who teach in the hood...and the rest of y'all too: Reality pedagogy and urban education*. Boston, Massachusetts: Beacon Press.

Fidyk, A. (2019). Trauma-sensitive practice for new teacher standards: Addressing the epidemic of our times. *In Education, 25*(1), 51-74.

Finn, H. (2010). Overcoming barriers: Adult refugee trauma survivors in a learning community. *TESOL Quarterly, 44*(3), 586-596.

Freire, P. (1996). *Pedagogy of the oppressed*. London, England: Penguin Books.

Giroux, H. (1997). *Pedagogy and the politics of hope: Theory, culture, and schooling*. Boulder, CO: Westview Press.

Gordon, D. (2015). Trauma and second language learning among Laotian refugees. *Journal of Southeast Asian American Education and Advancement, 6*(1), 13.

Herman, J. L. (1997). *Trauma and recovery*. New York, NY: Basic Books.

Hinton, D. E., & Good, B. J. (2016). Culture, trauma, and PTSD. In D. E. Hinton & B. J. Good (Eds.), *Culture and PTSD* (pp. 3-49). Philadelphia, PA: University of Pennsylvania Press.

Holmkvist, E., Sullivan, K. P., & Westum, A. (2018). Swedish teachers' understandings of post-traumatic stress disorder among adult refugee-background learners. In S. Shapiro, R. Farrelly, & M. J. Curry (Eds.), *Educating refugee-background students* (pp. 177-190): Multilingual Matters.

Horsman, J. (2004). But is it education? The challenge of creating effective learning for survivors of trauma. *Women's Studies Quarterly, 32*(1), 130-146.

Ibrahim, H., Ertl, V., Catani, C., Ismail, A. A., & Neuner, F. (2018). The validity of Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) as screening instrument with Kurdish and Arab displaced populations living in the Kurdistan region of Iraq. *BMC Psychiatry, 18*(1), 259. doi:10.1186/s12888-018-1839-z

Ilyas, M. (2019). Survivors of trauma in survival language programs: Learning and healing together. *The TESOLANZ Journal, 27*(CLESOL 2018 Conference Proceedings), 29-43.

Jelinek, L., Jacobsen, D., Kellner, M., Larbig, F., Biesold, K. H., Barre, K., & Moritz, S. (2006). Verbal and nonverbal memory functioning in posttraumatic stress disorder (PTSD). *Journal of Clinical and Experimental Neuropsychology, 28*(6), 940-948. doi:10.1080/13803390591004347

Johnsen, G. E., & Asbjornsen, A. E. (2009). Verbal learning and memory impairments in posttraumatic stress disorder: The role of encoding strategies. *Psychiatry Research, 165*(1-2), 68-77. doi:10.1016/j.psychres.2008.01.001

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., . . . Koenen, K. C. (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology, 8*(Suppl. 5), 1353383. doi:10.1080/20008198.2017.1353383

Khasinah, S. (2014). Factors affecting second language acquisition. *Englisia, 1*(2), 256-279.

Kincheloe, J., McLaren, P., & Steinberg, S. R. (2014). Critical pedagogy and qualitative research: Moving to the bricolage. In S. R. Steinberg & G. S. Cannella (Eds.), *Critical qualitative research reader* (pp. 14-32). New York, NY: Peter Lang Publishing.

King, J., & Smith, L. (2017). Social anxiety and silence in Japan's tertiary foreign language classrooms. In C. Gkonou, M. Daubney, & J.-M. Dewaele (Eds.), *New insights into language anxiety* (pp. 91-109). Retrieved from https://doi-org.ezproxy.library.uq.edu.au/10.21832/9781783097722

Knipscheer, J. W., Sleijpen, M., Mooren, T., Ter Heide, F. J., & van der Aa, N. (2015). Trauma exposure and refugee status as predictors of mental health outcomes in treatment-seeking refugees. *BJPsych Bulletin, 39*(4), 178-182. doi:10.1192/pb.bp.114.047951

Kramsch, C. (2015). Applied linguistics: A theory of the practice. *Applied Linguistics, 36*(4), 454-465. doi:10.1093/applin/amv039

Kruger-Gottschalk, A., Knaevelsrud, C., Rau, H., Dyer, A., Schafer, I., Schellong, J., & Ehring, T. (2017). The German version of the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Psychometric properties and diagnostic utility. *BMC Psychiatry, 17*(1), 379. doi:10.1186/s12888-017-1541-6

Lawless, B., & Chen, Y.-W. (2018). Developing a method of critical thematic analysis for qualitative communication inquiry. *Howard Journal of Communications, 30*(1), 92-106. doi:10.1080/10646175.2018.1439423

Lima, E. P., Vasconcelos, A. G., Berger, W., Kristensen, C. H., Nascimento, E. D., Figueira, I., & Mendlowicz, M. V. (2016). Cross-cultural adaptation of the Posttraumatic Stress Disorder Checklist 5 (PCL-5) and Life Events Checklist 5 (LEC-5) for the Brazilian context. *Trends in Psychiatry and Psychotherapy, 38*(4), 207-215. doi:10.1590/2237-6089-2015-0074

Lindauer, R. J., Olff, M., van Meijel, E. P., Carlier, I. V., & Gersons, B. P. (2006). Cortisol, learning, memory, and attention in relation to smaller hippocampal volume in police officers with posttraumatic stress disorder. *Biological Psychiatry, 59*(2), 171-177. doi:10.1016/j.biopsych.2005.06.033

Louzao, J. (2018). Unconscionable input: Confronting the impacts of adverse childhood experiences on English language learners. *Highline Language Research Journal*, 1-31. Retrieved from https://schd.ws/hosted_files/wabe2017/75/LouzaoELL-ACESpaper.pdf

Maercker, A., & Hecker, T. (2016). Broadening perspectives on trauma and recovery: A socio-interpersonal view of PTSD. *European Journal of Psychotraumatology, 7*.

Maercker, A., & Horn, A. B. (2013). A socio-interpersonal perspective on PTSD: The case for environments and interpersonal processes. *Clinical Psychology & Psychotherapy, 20*(6), 465-481. doi:10.1002/cpp.1805

Maley, A. (2016). "More research is needed" - A mantra too far? *Humanising language teaching, 18*(3). Retrieved from http://old.hltmag.co.uk/jun16/mart01.htm

McDonald, S. (2000). Trauma and second language learning. *The Canadian Modern Language Review, 56*(4), 690-696.

McIntyre, P. D. (2017). An overview of language anxiety research and trends in its development. In C. Gkonou, M. Daubney, & J.-M. Dewaele (Eds.), *New insights into language anxiety* (pp. 11-30). Retrieved from https://doi-org.ezproxy.library.uq.edu.au/10.21832/9781783097722

McKinley, J. (2019). Evolving the TESOL teaching–research nexus. *TESOL Quarterly, 53*(3), 875-884. doi:10.1002/tesq.509

McNally, R. (2016). Is PTSD a transhistoric phenomenon? In D. E. Hinton & B. J. Good (Eds.), *Culture and PTSD* (pp. 117-134). Philadelphia, PA: University of Pennsylvania Press.

McPherson, P. (1997). *Investigating learner outcomes for clients with special needs in the Adult Migrant English Program*. Retrieved from http://www.ameprc.mq.edu.au/__data/assets/pdf_file/0005/241439/BOOK_9_Special_needs.pdf

Medgyes, P. (2017). The (ir)relevance of academic research for the language teacher. *ELT Journal, 71*(4), 491-498. doi:10.1093/elt/ccx034

Montero, M. K. (2018). Narratives of trauma and self-healing processes in a literacy program for adolescent refugee newcomers. In S. Shapiro, R. Farrelly, & M. J. Curry (Eds.), *Educating refugee-background students* (pp. 92-106). doi:https://doi.org/10.21832/9781783099986-011

National Center for PTSD. (n.d.). *Using the PTSD checklist for DSM-5 (PCL-5)* [Fact sheet]. Retrieved from www.ptsd.va.gov

Nelson, C. D., & Appleby, R. (2015). Conflict, militarization, and their after-effects: Key challenges for TESOL. *TESOL Quarterly, 49*(2), 309-332. doi:10.1002/tesq.187

NSW Department of Education. (2020). *Trauma-informed practice in schools: An explainer*. Retrieved from https://education.nsw.gov.au/about-us/educational-data/cese/publications/research-reports/trauma-informed-practice-in-schools#:~:text=Trauma%2Dinformed%20practice%20focuses%20on,people%20who%20have%20experienced%20trauma.

Oxford, R. L. (2016). Toward a psychology of well-being for language learners: The 'EMPATHICS' vision. In P. D. MacIntyre, T. Gregersen, & S. Mercer (Eds.), *Positive psychology in SLA* (pp. 10-90). doi:10.21832/9781783095360

Oxford, R. L. (2017). Anxious language learners can change their minds: Ideas and strategies from traditional psychology and positive psychology. In C. Gkonou, M. Daubney, & J.-M. Dewaele (Eds.), *New insights into language anxiety* (pp. 177-197). Retrieved from https://doi-org.ezproxy.library.uq.edu.au/10.21832/9781783097722

Pennycook, A. (1990). Critical pedagogy and second language education. *System, 18*(3), 303-314. doi:https://doi.org/10.1016/0346-251X(90)90003-N

Pennycook, A. (2001). *Critical applied linguistics: A critical introduction*. Mahwah, N.J.: L. Erlbaum.

Perry, B. D. (2006). Fear and learning: Trauma-related factors in the adult education process. *New Directions for Adult and Continuing Education*(110), 21-27. doi:10.1002/ace.215

Reagan, T. (2005). *Critical questions, critical perspectives: Language and the second language educator*. Retrieved from https://search-ebscohost-com.ezproxy.library.uq.edu.au/login.aspx?direct=true&db=nlebk&AN=469826&site=ehost-live

Rose, H. (2019). Dismantling the ivory tower in TESOL: A renewed call for teaching‐informed research. *TESOL Quarterly, 53*(3), 895-905. doi:10.1002/tesq.517

Sadeghi, M., Taghva, A., Goudarzi, N., & Rah Nejat, A. (2016). Validity and reliability of Persian version of "post-traumatic stress disorder scale" in war veterans. *Iranian Journal of War & Public Health, 8*(4), 243-249.

Silove, D. (2000). A conceptual framework for mass trauma: implications for adaptation, intervention and debriefing. In *Psychological Debriefing* (pp. 337-350).

Silove, D. (2005). The best immediate therapy for acute stress is social. *Bulletin of the World Health Organization 83*(1), 75-76.

Silove, D. (2013). The ADAPT model: A conceptual framework for mental health and psychosocial programming in post conflict settings. *Intervention, 11*(3), 237-248.

Silove, D., Steel, Z., & Bauman, A. (2007). Mass psychological trauma and PTSD: Epidemic or cultural illusion? In J. Wilson & C. S. Tang (Eds.), *Cross-cultural assessment of psychological trauma and PTSD* (pp. 319-336). New York, NY: Springer.

Şimşek, E., & Dörnyei, Z. (2017). Anxiety and L2 self-images: The 'anxious self'. In C. Gkonou, M. Daubney, & J.-M. Dewaele (Eds.), *New insights into language anxiety* (pp. 51-70). doi:10.21832/9781783097722

Smyth, J. (2011). *Critical pedagogy for social justice*. New York, NY: Continuum International Publishing.

Sparks, R. L., Ganschow, L., & Javorsky, J. (2000). Deja vu all over again: A response to Saito, Horwaitz, and Garza. *The Modern Language Journal, 84*(2), 251-255. Retrieved from https://www.jstor.org/stable/330490

Supin, J. (2016). The long shadow: Bruce Perry on the lingering effects of childhood trauma. *The Sun*. Retrieved from https://thesunmagazine.org/issues/491/the-long-shadow

Theorell, T., & Sondergaard, H. P. (2004). Language acquisition in relation to cumulative posttraumatic stress disorder symptom load over time in a sample of resettled refugees. *Psychotherapy and Psychosomatics, 73*, 320-323. doi:10.1159/000078849

Thrasher, S., Dalgleish, T., & Yule, W. (1994). Information processing in post-traumatic stress disorder. *Behaviour Research and Therapy, 32*(2), 247-254.

Thurman, J. (2018). Affect. In *The TESOL encyclopedia of English language teaching* (pp. 1-6).

Tweedie, M. G., Belanger, C., Rezezadeh, K., & Vogel, K. (2017). Trauma-informed teaching practice and refugee children: A hopeful reflection on welcoming our new neighbours to Canadian schools. *BC TEAL Journal, 2*(1), 36-45.

van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. London: Penguin Books.

VanPatten, B., Williams, J., Keating, G. D., & Wulff, S. (2020). Introduction: The nature of theories. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition: An introduction* (3rd ed., pp. 1-18). Retrieved from https://ebookcentral-proquest-com.ezproxy.library.uq.edu.au/lib/uql/reader.action?docID=6120993&ppg=1

Vasterling, J. J., Duke, L. M., Brailey, K., Constans, J. I., Allain, A. N. J., & Sutker, P. B. (2002). Attention, learning, and memory performances and intellectual resources in Vietnam veterans: PTSD and no disorder comparisons. *Neuropsychology, 16*(1), 5-14. doi:10.1037/0894-4105.16.1.5

Wallace, D. (2020). Post-traumatic stress disorder in Australia: 2020. *Australasian Psychiatry, 28*(3), 251-252. doi:10.1177/1039856220922245

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Retrieved from https://www.ptsd.va.gov/

Wilbur, A. (2016). Creating inclusive EAL classrooms: How language instruction for newcomers to Canada (LINC) instructors understand and mitigate barriers for students who have experienced trauma. *TESL Canada Journal, 33*(10), 1-19. doi:http://dx.doi.org/1018806/tesl.v33i0.1242

Wilson, V. (2022). Human-informed TESOL: Trauma-informed for all learners. Retrieved from https://humaninformedtesol.com/

Woodrow, L. (2006). Anxiety and speaking English as a second language. *RELC journal, 37*(3), 308-328. doi:10.1177/0033688206071315

Zinn, D., & Rodgers, C. (2012). A humanising pedagogy: Getting beneath the rhetoric. *Perspectives in Education, 30*(4), 76-87.

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Why Parents Do What They Do:
Developing and Validating a Survey for the Mathematical Lives of Parents and Children

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Abstract

Learner variability presents an enormous challenge for teachers and schools. Even as early as kindergarten, incredible learner diversity exists in terms of children's early learning experiences, especially in mathematics. Research has shown that this variability begins in the home environment, where parents and caregivers have the biggest impact on the child's readiness for school. Regular, high-quality, parent-child shared math interactions have a great impact on the child's foundational math knowledge. However, there are limited studies on the parent motivations that drive these interactions, especially for parents of young children (ages 3- to 5-years-old) in the area of mathematics. The present study focuses on the continued development of a survey instrument that helps stakeholders better understand parent/caregiver perceptions, decision-making, and behaviors around mathematical parenting in the home. This study builds on previous work (e.g., Betts, 2021) that establishes RESET (Role, Expectations, Skills, Efficacy, Time) as a framework for examining the parent perceptions and motivations that most influence interactions in the home mathematics environment. A convenience sample (n = 63) was used to pilot the survey instrument and test the reliability of items. Building on prior work, the present study tests a revised tool designed to collect data on mathematical parenting practices (i.e., perceptions, motivations, and behaviors) in the home to help increase our understanding of the ways families can be guided to support the early mathematics learning of their young children.

Keywords: Early Childhood Mathematics, Home Learning Environment, Home Numeracy Environment, Parent Involvement, Mathematics

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Introduction

Learner variability presents an enormous challenge for teachers and schools. Even as early as kindergarten, incredible learner diversity exists in terms of children's early learning experiences, especially in mathematics. This variability impacts children's opportunities to take full advantage of the learning that takes place in school (Betts, Thai, Jacobs, & Li, 2020), and often creates insurmountable challenges for teachers who are tasked with ensuring that all children achieve grade level standards before moving on to the next grade.

The effects of unaddressed learner variability are daunting. In the USA alone, mathematics achievement lags with nearly two-thirds of all 4th and 8th grade students unable to meet proficiency standards for their grade level (deBrey et al., 2019). Two decades of research have shown that early mastery of key competencies in mathematics are critical to later achievement, yet many children leave kindergarten without having mastered these key competencies (Claessens & Engel, 2013; Duncan et al., 2007; Nguyen et al., 2016). Moreover, children enter kindergarten with wide differences in their mathematics foundations, and many experience challenges in mastering these key competencies during the kindergarten year. These challenges result largely from differences in children's levels of prior knowledge, readiness to learn, and learning pace (Betts, Thai, Jacobs, & Li, 2020; Thai, Betts, & Gunderia, 2022).

The origins of learner variability are thought to begin in the home environment, where parents and caregivers have the biggest impact on the child's readiness for school (Blevins-Knabe, 2016; Cankaya & LeFevre, 2016). Regular, high-quality, parent-child shared math interactions greatly influence the development of the child's foundational math knowledge (see also Daucourt et al., 2021; Dunst et al., 2017; Gac-Artigas, 2017). However, there are limited studies on the parent motivations that drive these interactions, especially for parent perceptions and behaviors around the development of young children's mathematics knowledge (see Lukie et al, 2014; Cankaya & LeFevre, 2016). Some instruments are found in the literature that do examine aspects of individual perceptions related to mathematics, mathematical parenting, or parental involvement in their child's education (see Table 1). However, other than an exploratory study conducted by one of the authors of this paper in 2019 (Betts, 2021), few other studies (see Cankaya & LeFevre, 2016; Lukie et al., 2014) could be found that focused specifically on parent attitudes and perceptions around mathematical parenting.

Source	Tool / Instrument	Descriptions
Instruments that explore ***General Parenting Perceptions and Involvement*** in their child's education		
Bradley et al., (1982)	The HOME/Home Observation for Measurement of the Environment instrument	This observation tool is used by researchers to evaluate the richness (or lack thereof) of the home learning environment. However, it is not math specific, and not related to parents' mathematical cognitions or behaviors.

Liu et al. (2010)	Parent Involvement Mechanisms Measurement (PIMM)	This instrument was developed to measure parental encouragement, parental modeling, parental reinforcement, and parental instruction, largely focused on fostering child behaviors that encourage learning and work habits (e.g., "we show this child we like it when he or she… *works hard on homework*" (p.117). While this instrument does exhibit some connections to the RESET domains, this instrument is not mathematics specific.
Reed, Jones, Walker, & Hoover-Dempsey (2000)	Parent motivations for involvement in children's education survey	The instrument developed for this study is based on the Hoover-Dempsey and Sandler's (1997) model for parent involvement in their child's education; items here are designed to elicit parent motivations for becoming (or not becoming) involved in their children's education. However, this is not mathematics specific.
Rothschild & Sheehan (unpublished)	Parent Sentiments Survey	This large-scale study (unpublished) was sponsored by the EdTech company, Age of Learning, and conducted by its User Research team in 2019 to gather parent perceptions across a wide range of topics, including mathematics, related to the development of their young children. Researcher had access to these items because of her employment at Age of Learning.

Instruments that explore *Individual Perceptions and Attitudes Around Mathematics*		
Childs (2013)	Attitude Towards Math Inventory (ATMI)	The survey used in this dissertation study was originally developed by Tapia (1996). Child's (2013) dissertation includes all of the items from Tapia's (1996) ATMI. This instrument measures an individual's attitudes and is not specific to parents or the unique perspectives parents might have related to their children's learning of math.
Doepken, Lawsky, & Padwa (1993)	Modified Fennema-Sherman Math Attitude Scale	This scale presents a modified version of three of the Fennema-Sherman Mathematics Attitude Subscales: Confidence; Usefulness; Male Dominant; Teacher. Each scale has 12 items: 6 positive and 6 negative. This instrument was used by teacher-researchers to get a better sense of the math attitudes of their students.
Fennema & Sherman (1976)	The Mathematics Attitudes Scale (MAS)	This instrument includes a collection of subscales that measure an individual's attitudes towards mathematics: confidence; usefulness; Math as Male Dominant; Mother/Father; Teacher; Math Anxiety; Effectance Motivation. Though it might seem at first as if the Mother/Father subscale would be a good fit for this study, it actually measured the perspectives of the child about their parents' attitudes towards mathematics (and not the perceptions of the parents of the child's math learning).
Tapia (1996); Tapia & Marsh (2004)	The Attitudes Toward Math Inventory (ATMI)	This instrument was developed initially by Tapia (1996), then expanded upon by Tapia and Marsh (2004). The resulting survey included 40 items designed to measure an individual's attitudes toward mathematics, and to specifically examine multiple factors that contribute to math attitudes. This survey instrument, however, is not specific to parents or the role of parents.

Instruments that explore ***Parent Perceptions and Attitudes Around Mathematical Parenting***		
Betts (2021)	RESET-MAPP Survey	This instrument was developed for an exploratory study and included 20 initial items designed to explore the RESET domains. Items were tested in a pilot study conducted in 2019.
Muir (2018)	Parent Perspectives Questionnaire	This instrument includes 11 items piloted in a study designed to elicit parents' understanding of contemporary math practices and investigates parents' beliefs and attitudes related to the mathematics learning of their young child. There are some strong connections between this tool and the areas explored in RESET.
Phillipson et al. (2017)	Family Educational and Learning Questionnaire (FELQ)	This instrument includes 16 items that were used in a study of parent perceptions of early mathematics learning. The instrument was used to examine "parental indications of the importance of mathematical learning prior to starting school and who is responsible for the learning" (pp.138-139), which makes it a strong foundation for developing RESET items.

Table 1: Sources for RESET Framework item development

Furthermore, no studies could be found by the authors of this paper that examine the critical factors that influence parents' mathematics parenting cognitions and behaviors, or how parent's perceptions of their own roles, expectations, skills, self-efficacy, and time influence and interact with one another to drive to mathematical parenting. This is an important limitation of the literature to consider, for if parent-child shared math activity has the potential to improve child mathematics outcomes, we must better understand what motivates parents to engage with their children through mathematics. Understanding parent perceptions and motivations, how they form and are influenced, or how they can be developed to benefit their children's mathematics learning has the potential to help to better inform parent-engagement and education programs aiming to increase parent-child math activity.

In a pilot study (Betts, 2021), the RESET Framework (*Role, Expectations, Skills, Efficacy, Time*) was developed to examine the key factors that influence the development of mathematical parenting knowledge and skills. The domains that comprise the RESET Framework are grounded in the work of several theorists and researchers, including the social learning theories of Bandura (1977) and Marjoribanks (1976), as well as the earlier theories of Vygotsky (1986; originally published 1936). These theorists have highlighted the critical importance of parents and caregivers in their children's learning, both in setting expectations and establishing values, as well as modeling and acting as *more knowledgeable others* (Vygotsky, 1986).

While the work of these theorists provides explanations for *why* parents' and caregivers' involvement are critical to children's learning and achievement, they do not tell us much about factors that influence parents' motivations and decision-making around becoming involved (or not) in the learning of their children. Here the work of Hoover-Dempsey and Sandler (1995, 1997; Walker et al., 2005; Walker et al., 2010) as well as Mowder (2005) are useful, as they emphasize the critical importance of parent conceptualizations of their parental role and expectations as motivational factors driving involvement in the child's educational development. Hoover-Dempsey and Sandler further identify parent perceptions

of their own skills and knowledge, self-efficacy, and time and energy as important factors influencing parenting cognitions and behaviors.

Bronfenbrenner's (1992) *Ecological Systems Theory of Learning* also helps us better understand how parent perceptions develop and evolve. How exactly, do parents learn to do the work of mathematical parenting? Bronfenbrenner's work informs the RESET Framework by illuminating how parents formulate their perceptions of *Role, Expectations, Skills, Efficacy,* and *Time* (see Figure 1). Proximal influences from the micro- and meso- systems such as family, as well as parents' community groups such as church or work impact parenting cognitions and behaviors. Consider that a parent working two jobs may perceive less time and energy available to become involved in supporting the child's education. Conversely, a parent raised to value academic achievement and good grades may develop the same set of high expectations for their own child. Additionally, parents who participate in play groups with peer parents may model their own expectations after those parents, especially if they feel a lack of self-efficacy and are looking for guidance.
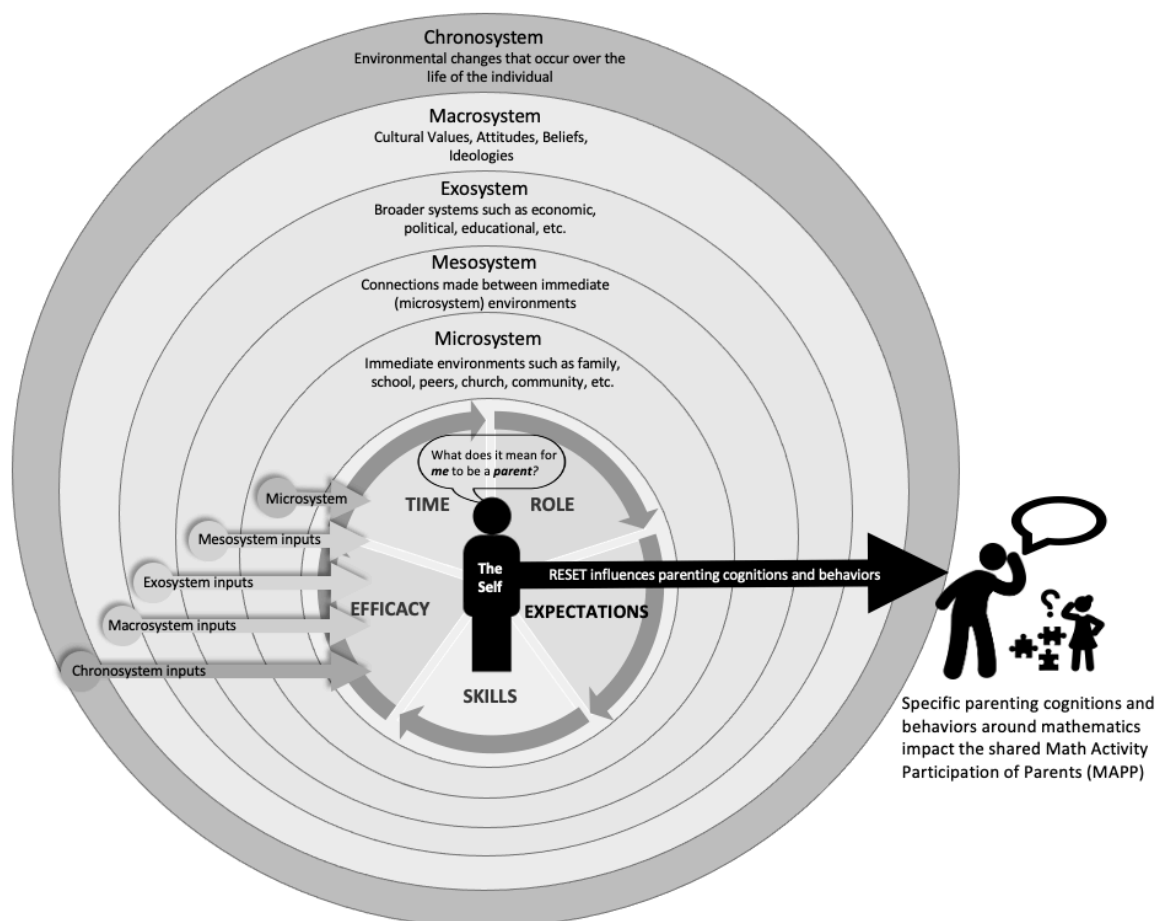
Figure 1: The RESET Framework at the center of Bronfenbrenner (1992) & Mowder (2005)

Distal influences in the exosystem (e.g., economics, politics, education), as well as the macrosystem (e.g., cultural values, attitudes, beliefs, and ideologies), also may influence parent perceptions of Role, Expectations, Skills, Efficacy, and Time. For example, economic realities that force a parent to work two jobs, or constrain a parent's material resources, may limit the kinds of educationally supportive resources a parent might be able to provide in the home (e.g., blocks, math toys, etc.) or access to other supports such as tutoring. The educational attainment of the parent, or the educational philosophies the parent was exposed

to during their own education (e.g., Montessori, Reggio, Waldorf, etc.), may also inform the ways parents determine how best to support the child's learning. Moreover, an individual's culture of origin may also heavily influence the parent's involvement. Culturally influenced gender roles may dictate that parents of one gender be more involved in child rearing, while the other gender works and provides monetary support. An individual's culture may also influence the perceived value of education, or which academic subjects should be valued more, etc.

The expansive work of these theorists and researchers have served to help refine the RESET Framework to include *Role, Expectations, Skills, Efficacy,* and *Time*. Through the lens of RESET, mathematics parenting cognitions and behaviors (i.e., "mathematical parenting") can be contextualized and understood more fully (see Table 2).

RESET Framework Construct Descriptors

R **Role**	A parent's construction of their parental role is shaped by their early experiences in learning math, the ways in which they were parented, values and beliefs related to education, and other peer and societal or cultural influences. A parent's role construction is socially constructed and may change in response to changing social conditions, efforts (e.g., parent education or intervention programs, or even the child themselves), or the accumulation of life experiences.
E **Expectations**	The parent's expectations for the child's performance or development in mathematics is influenced by the value that the parent places on the learning of mathematics, its perceived role in the life of the parent and child, its perceived impact on the future success of the child, and the parent's knowledge and awareness of the mathematics concepts and skills appropriate for the child's age and developmental level.
S **Skills**	Parent's perceptions of their own mathematics skills and knowledge impact the ways in which they choose to interact with their children through mathematics, the types of skills and concepts they emphasize, and the expectations they have for their children's math development (e.g., if a parent feels like his or her life opportunities were limited because of weak math skills, they may conversely adopt higher expectations for their child's math learning in order to ensure the child is not limited by lack of math knowledge and skills).
E **Efficacy**	Parents' sense of self-efficacy is related to their belief in their ability to successfully support the math development of their child. It is influenced by their perceptions of math skills and knowledge, and influences their expectations for their child's math learning, as well as the ways in which they engage their child in mathematics activities.
T **Time**	Parent engagement in shared math activity is influenced by their perceptions of the time and energy available to participate. Parent perceptions of time and energy may be impacted by their perceived skills, knowledge, and sense of self-efficacy. For example, more time and energy may be required from parents with low self-efficacy to engage meaningfully with their children through mathematics (more time to prepare in order to feel confident and comfortable, more anxiety that saps energy, etc.).

Table 2: Descriptors of RESET Constructs, adapted and expanded from Betts (2021)

Purpose and Significance of Study

The purpose of the present study is to use the RESET Framework to develop and test a survey instrument that reliably measures parents' and caregivers' perceptions along the five RESET constructs (*Role, Expectations, Skills, Efficacy, Time*). As mentioned previously, very

few tools exist to measure parent cognitions, perceptions, motivations, and decision-making related to math parenting young children in the home (Blevins-Knabe, 2016). Better understanding these aspects of parental involvement in children's math learning is necessary to better support students and families. The present study seeks to develop, test, and validate a new survey instrument for the measurement of parent perceptions related to the math parenting of their young children. The research question driving the present study is:

> *How can we create a self-administered, survey instrument that reliably investigates parent and caregiver perceptions of mathematical parenting along the RESET Framework?*

Surveys as tools for data collection have both strengths and weaknesses (Artino et al., 2014; Artino et al., 2018; Desimone & Le Floch, 2018). For example, respondents may not understand the questions, may not have the same mental construct or definition for terms used as the researcher does, may struggle to remember pertinent information, or may not understand how to convey that information using the response structures presented (Artino et al., 2014; Artino et al., 2018; Desimone & Le Floch, 2018; Tourangeau, 1984; Willis et al., 1991). Desimone and Le Floch (2018) point out that "most threats to validity stem from the complexity of phenomena that researchers seek to capture in a survey instrument, the possibility that respondents may answer in a socially desirable way, and or the hazard of a [respondent] unknowingly providing misleading responses" (p. 6), but that pretesting (or piloting) surveys, are "a useful method for addressing these quality issues. Pretests in survey research focus on examining the validity of question items and identifying and controlling the root cause of the response errors" (p. 5). Carefully designed and tested surveys can address many of the criticisms surveys face as a tool for effective data collection (Artino et al., 2018; Desimone & Le Flock, 2018). Additionally, the collection of sufficient data provides avenues for refining the instrument, thereby reducing the length of the survey, and leading to improved data quality (Alwin & Beattie, 2016).

This study has both theoretical and practical significance. The refined RESET Framework has the potential to establish a clear and useful conceptual framework that describes and measures parent perceptions motivations in relation to young children's home mathematics environment. Building on previous work (Betts, 2021), the present study focuses on the further development and validation of the RESET survey instrument, and provides researchers with ways to examine factors that influence parent involvement in their child's mathematics education. Tools such as the RESET survey have the potential to help stakeholders achieve (1) a deeper understanding of parent perceptions and (2) provide critical insight needed to develop high-quality student and family support programs that encourage more parent-child math participation.

Study Design

For the present study we used mixed-methods (i.e., online self-administered survey and cognitive interviews) to develop and validate a self-administered survey that reliably investigates parent and caregiver perceptions along the RESET (*Role, Expectations, Skills, Efficacy, Time)* Framework. First, quantitative data were collected through an online self-administered survey. Next, qualitative data were collected through cognitive interviews with the first researcher.

The design of this mixed-methods study involved three phases: Phase 1— survey development, design, and validity checks; Phase 2 – initial qualitative and quantitative data

collection and analysis; and Phase 3 – additional qualitative data collection and final item analysis and validation (see Fig. 2). In Phase 3, quantitative and qualitative data were analyzed, compared, and triangulated to determine which items on the survey provided reliable information about each of the RESET constructs. Based on this analysis, the RESET survey was revised and shortened for use in subsequent studies.
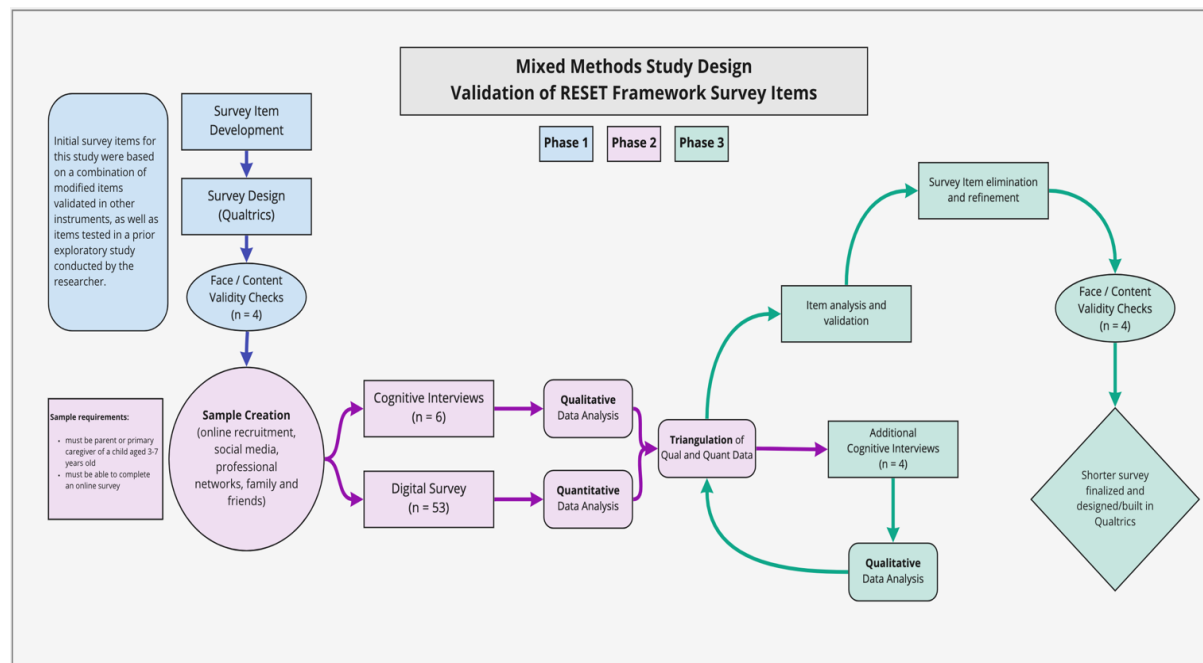

Figure 2: Mixed-Methods Study Design for RESET Survey Validation

Participants

A convenience sample of parents and caregivers (n = 63) of children, ages 3- to 7-years-old was included in in this study. These participants were recruited through outreach by the researchers via a combination of social media, professional networks, as well as family and friends. Each participant in this sample completed the RESET portion of the survey, consisting of 10 items per construct, for a total of 50 items. Ten of the participants in this sample additionally completed the survey through an online conferencing platform (i.e., Zoom) with the researcher using a cognitive interview protocol.

It is important to note that 83 participants initiated the survey but did not finish all sections. In this study, we used 63 participants who fully completed responses on the RESET portion of the survey and were deemed sufficient for analysis. The available demographics data— while incomplete—showed this sample to be largely white, middle class, educated, married, and geographically located most generally in the western United States.

Survey Instrument

Items developed for use as part of the RESET Framework Survey were grounded in the work of several other studies (see earlier Table 1). For example, several items were developed and tested as part of a previous exploratory mixed methods study conducted by the researcher to gather data about parent perceptions around math parenting their young children (Betts, 2021). Yet, many items used in the present study required modification to capture this specific viewpoint. For example, items from other surveys focused on the individual's

perceptions as the math learner (e.g., Doepken, Lawsky, & Padwa, 1993 or Tapia, 1996), rather than individual's perceptions of parenting their child as a math learner (see Table 3 for other examples). As such, many items from other instruments could not be included verbatim in the present study as few instruments exist that specifically measure parent perceptions, motivations, and decision-making around the math parenting of their young children. Please see Table 1 for a list of instruments from which items for the RESET Framework survey were drawn and modified.

Source	Original Item	Modified for RESET Survey	Reason for Modification
Reed, Jones, Walker, & Hoover-Dempsey (2000)	"It's my job to make sure my child understands his or her assignments."	[Role Construct] "It's my job to make sure my child understands *how to count to ten*.	Modified to make math specific and for clarity.
Doepken, Lawsky, & Padwa (1993)	"I study math because I know how useful it is."	[Expectations Construct]: "I *help my child learn math* because I know how useful it is."	Modified to make math specific.
Tapia (1996)	"I am willing to take more than the required amount of mathematics."	[Skills Construct]: "*I took* more than the required amount *of math courses in school."*	Modified to reflect parents' math education experience.
Reed, Jones, Walker, & Hoover-Dempsey (2000)	"I feel successful about my efforts to help my child learn"	[Efficacy Construct] "I feel successful about my efforts to help my child learn *math*."	Modified to make math specific.
Muir (2009)	"I regularly engage in numeracy related activities with my child."	[Time Construct]: *"I spend time most days doing some math activities with my child."*	Modified for clarity and language accessibility.

Table 3: Examples of previously tested items that were modified for use in the RESET survey.

The goal of the RESET Framework survey is to gather data on parent perceptions related to the RESET constructs. 10 items per construct (i.e., total of 50 items for all 5 constructs) were developed and tested in the present instrument in order to provide the needed statistical power (i.e., item reliability) (Barclay et al., 1995; Chin, 1998; Chin & Newsted, 1999). A belief statement was used in each item, where parents were asked to indicate their level of agreement using a 7-point Likert scale (i.e., *1-strongly disagree, 2-disagree, 3-slightly disagree, 4-neither agree nor disagree, 5-slightly agree, 6-agree, 7-strongly agree*). The choice of a 7-point scale is intentional, as "a fully labeled 7-point scale may provide the greatest benefit to researchers" (Eutsler & Lang, 2015). Figure 3 shows an example of a survey item from the *Role* construct.
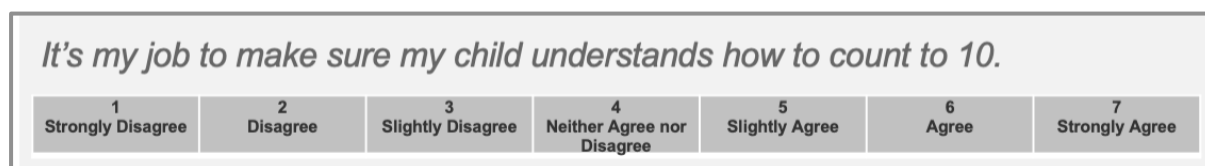

Figure 3: Example of a Likert item for ROLE construct

The survey instrument, in its entirety, contains three main sections: RESET Framework Survey, Math Activity Participation of Parents Survey, and Demographics (see Fig. 4).

The RESET Framework Survey (10 items per construct, 50 items in total) comprises the first section. The second section of the instrument (MAPP / Math Activity Participation of Parents Survey) presents items developed in an earlier study (Betts, 2021) designed to measure parent self-reports of shared math activity in the home. The third section of the instrument presents items designed to capture the demographic data of the participants, as well as some additional information related to math parenting during the Covid-19 pandemic. The entire survey contains just over 100 items and takes approximately 30-40 minutes to complete on average. In this study, we focused solely on the RESET Framework portion of the survey (i.e., the first 50 items on the instrument).

Procedures and Data Collection

The survey instrument was built using the Qualtrics software platform, an online survey software that provides researchers with tools to collect, analyze, and interpret data (Calvert & Peckman, 2022; Qualtrics, 2021). The survey was distributed to participants through online links shared via social media and email channels. Further qualitative data was collected from cognitive interviews conducted via Zoom video conferencing (Bhatt & Shiva, 2020), using screen recording features and electronic memo writing by the researcher. Automated transcriptions of the recorded interviews were generated using the Transperfect automated software (Bywood, 2020).
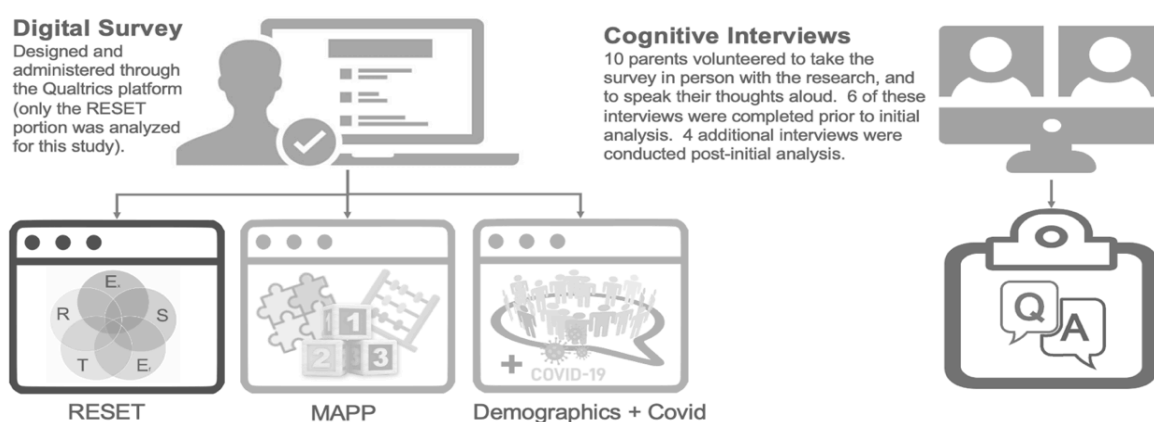
Figure 4: Data Collection Procedures

Responses on the RESET Framework survey were collected from a total 63 participants. Participants were asked if they were willing to complete their survey using a cognitive interview protocol; a total of 10 respondents indicated their willingness to complete their survey in this manner and were selected to participate in cognitive interviews with the researcher. Each cognitive interview took approximately one hour to complete and involved the participant (1) taking the survey during a recorded online session with the researcher, (2) engaging in a "think aloud" while completing the survey, and (3) providing elaboration on thinking as directed by the researcher. For example, when parents expressed confusion or interpreted an item differently than intended, the researcher prompted them to share more about what they were thinking. Six of the ten parents were interviewed as part of the initial data collection, and four were interviewed after initial data analysis to gather additional data.

Data Analysis

Quantitative data were imported into SPSS for analysis. Exploratory factor analysis (EFA) was performed to determine which items in each RESET construct were loading together. Analysis of the pattern matrix was used to identify problematic items with multiple factor loadings. Cronbach's Alpha was used to determine the reliability of the items.

Qualitative Data in the form of researcher memos were coded for points of interest or areas for further examination within video transcriptions. Items working as intended were identified as were those that were problematic, confusing, or misinterpreted. Problematic items were further investigated for the purposes of generating hypotheses and explanations.

Both qualitative and quantitative data were triangulated using a variety of strategies in answering the research question. Problematic items identified through qualitative data analysis were compared to the pattern matrix data and Cronbach's reliability analysis. What few conflicts emerged were further investigated through the final four cognitive interviews for resolution. Insights generated by analyses of both quantitative and qualitative data were used to answer the research question and make final decisions about which items to retain and which to eliminate in order to finalize a reliable survey instrument.

Results

Results of the data analysis showed that on the whole, most of the items were worked quite well together. For example, Cronbach's alphas for each of the five constructs were well within acceptable limits (e.g., *Role (.824); Expectations (.627); Skills (.949); Efficacy (.839); Time (.838)*). However, this result did not provide sufficient data to determine how best to refine and shorten the survey. During analysis, we noticed that 83 participants initiated the survey but 20 did not finish all sections due to the number of items to complete or given the length of the survey. Thus, an additional purpose of the present study was to determine how best to create a shorter version of the survey that participants were more likely to finish.

Both qualitative and quantitative data analysis were used to identify items for potential removal. Qualitative data analysis showed that participants did experience some confusion with some of the items, or that items seemed to be measuring something other than intended. For example, one item in the *Skills* construct that was designed to help unpack parents' perceptions about their own math skills (i.e., *I got good grades in my math classes in school)*, was shown in parent think-alouds to be inconsistent with parent perceptions of strong math skills. In other words, this item measured the opposite of what it was intended to measure—at least in some cases. For example, some parent expressed that they received "good grades" in their math courses in school, but still perceived themselves as weak in learning and doing mathematics. In another instance, parents were confused by the use of the word "job" in one of the *Role* items (i.e., *It's my job to help my child learn math*). Parents seemed to be interpreting the word "job" as a vocation instead of a responsibility, in some cases remarking that it was the teachers' "job" to make sure the child learns math. In yet another instance, it became clear through parents' verbalizations, that another of the *Role* items (i.e., *I know what math my child is supposed to learn before starting kindergarten*) was a more accurate representation of the *Expectations* construct.

Quantitative data analyses were also used to identify items for potential removal. For example, in the *Role* construct, exploratory factor analysis showed that two items loaded on

more than one factor; these were marked for removal. Two additional items were flagged using qualitative analysis. The *Expectations* construct had the lowest reliability score (α =.627), and as such two items were removed to improve the alpha, as well as two additional items flagged for removal using qualitative data analysis. Because alphas greater than .9 suggest redundancy (Tovakol & Dennick, 2011), a few items in the *Skills* construct (α = .949) were flagged for potential removal using both qualitative and quantitative data analysis strategies. The *Efficacy* construct included five separate items that were shown to load on more than one factor and were flagged for removal. Lastly, in the *Time* construct, two items were shown to load on more than one factor and were flagged for removal while an additional two items were flagged using qualitative analysis. See Table 4 for a summary of these results.

RESET Construct	Cronbach's Alpha for initial 10 items	Data Analysis	Items flagged for removal
Role	α = 0.824	• 2 items with multiple factor loadings • 2 additional items identified as problematic using qualitative data (e.g., misinterpreted, or confusing)	4 items total removed
Expectations	α = 0.627	• 2 items removed to improve Cronbach's Alpha. • 2 additional items identified as problematic using qualitative data (e.g., misinterpreted, or confusing)	4 items total removed
Skills	α = 0.949	• Qualitative data on all items examined to identify instances of redundancy • 4 items identified to lower Cronbach's Alpha (Tovakol & Dennick, 2011)	4 items total removed
Efficacy	α = 0.839	• 5 items with multiple factor loadings (1 item retained in final analysis to achieve a consistent 6 items per construct*) • Qualitative data examined for instances of misinterpretation	4 items total removed*
Time	α = 0.838	• 2 items with multiple factor loadings • 2 additional items identified as problematic using qualitative data (e.g., misinterpreted, or confusing)	4 items total removed

Table 4: Summary results of data analysis

In the final refinement of the survey, one of the *Efficacy* items that was initially flagged for removal was retained in order to achieve a consistent 6 items per construct. After 6 items in each construct were selected and finalized, reliability analyses were performed again, and all were within acceptable ranges (Final Cronbach's alphas are shown in Fig. 5).

Discussion

The purpose of this study was to identify reliable items to be used in the development of a survey instrument to examine parent perceptions of math parenting in the home environment. Given the limited number of studies available that examine parent motivations and decision-making around mathematics parenting, a tool such as the one developed in this study is crucial to understanding the factors that influence and impact parental support of math learning in the home.

Results showed that the original items included in the survey instrument were largely reliable in measuring each construct. However, qualitative analyses demonstrated that a few items were problematic, causing slight confusions for participants or were being interpreted by participants. Additionally, exploratory factor analysis showed that some items experienced multiple factor loadings. Furthermore, the length of the entire survey was a barrier to completion, with many participants failing to complete the final portions of the survey designed to collect key demographic information. As such, an important goal of this study was to determine ways to reduce the length of the survey, while still maintaining the reliability of the items and the data they collect. The data collected and analyzed presented sufficient evidence for the inclusion of six items per construct, reduced from the initially proposed ten items. Based on these analyses, the final six items for each RESET construct are shown in Figure 5.

Role α = .802	Expectations α = .749	Skills α = .917	Efficacy α = .827	Time α = .789
• It's my responsibility to make sure my child understands how to count to ten. • It's my responsibility to explain how to do simple math to my child (for example, add 2 and 3 together to equal 5). • I make it my business to know what my child does or doesn't understand about math. • I don't worry about teaching my child math, because they will learn it when they start kindergarten. • My child's math learning is entirely up to the teacher and my child. • It is important for me to talk to my child about math at home.	• Mathematics is one of the most important subjects for my child to learn. • I believe that my child's everyday home activities should include math. • I expect my child to get good grades in math class in school. • I help my child learn math because I know how useful it is in learning and life. • I want my child to like and enjoy math. • I expect my child to be able to count to 20 or more before they start kindergarten.	• I am confident that I could learn advanced math if I wanted to (like algebra, trigonometry, pre-calculus, etc.). • I sometimes struggle to do math-related tasks in my life. • I took more than the required number of math courses in school. • I am good at solving advanced math problems. • I personally have strong math skills. • I struggled to learn math in school.	• I have the math knowledge and skills I need to help my child learn math right now. • I feel successful about my efforts to help my child learn math. • I make a significant difference in my child's math learning. • I sometimes feel anxious when helping my child learn math. • It's easy for me to help my child learn math. • I worry that I am making my child anxious when I help them with math.	• I feel like I don't have enough time to do math activities with my child. • I spend most days doing some math-related activities with my child. • I have the energy I need to help my child with their math learning. • I struggle to make time to do math activities with my child. • It takes a lot of energy to get my child to do math activities with me. • I enjoy regularly spending time doing math activities with my child.

Figure 5: Reliability Analyses for Finalized Items per RESET Construct

Limitations and Considerations

Several limitations must be considered along with the results of this study. The sample was small (n = 63) and relatively homogenous (e.g., white, middle class, educated, married, geographic concentrated in one region of the USA) according to available demographic data. Furthermore, the sample consisted entirely of volunteers solicited from the researcher's personal and professional networks. Social desirability bias must also be considered

whenever conducting research with parents and caregivers who may wish to exhibit the characteristics of "good parents."

Additional limitations included access to working technology, internet, and English-language proficiency. The length of the survey further eliminated many participants who were unable to finish the first section of the survey (50+ questions).

Another important consideration includes reflecting on parents' abilities to express themselves around mathematics. Parents often lack the confidence to talk about mathematics and struggle to find the language to describe their thoughts, motivations, and experiences (Betts, 2021; Clements & Sarama, 2014; Sonnenschein et al., 2005). Furthermore, many parents also experience math anxiety that may impact their responses (Betts, 2021: Herts et al., 2019).

Future Areas of Research

Based on the results of the present study, a newly revised survey tool has been created and has already been administered to over 800 parents across the USA. This new sample is more diverse in terms of ethnicity, age, gender, marital status, employment status, income level, home language, and geography, and has been narrowed to focus in primarily on the parents of 4- to 5-year-old children who have not yet begun kindergarten. Newly collected data will be used to continue the validation of the RESET Framework and survey instrument. Additionally, data from the other sections of the survey will be analyzed and compared to the RESET data to assist with validation of the items, as well as to answer primary research questions around mathematics parenting and shared parent-child math interactions in the home.

Future areas of research should continue to focus on validating the survey items, as well as using the survey instrument as a means of identifying trends or patterns in parent perceptions (e.g., are there groups of parents with shared perceptions that can be accounted for and addressed through family support programs?). Our hope is that other researchers in this field feel encouraged by this work and are inspired to use the RESET Framework and survey as a means of studying of early childhood mathematics, particularly the role that parents play.

Conclusion

This study contributes important resources for the study of parents, their cognitions, and behaviors in the home mathematics learning environment—an area of study where few tools, concepts, or common language exists, and even less is understood about parent motivations and decision-making.

Validated tools, like the one under development in this study, have the potential to help advance our understanding of parents and their role in the development of their children's mathematics knowledge. This, in turn, has the potential to drive the creation of better family engagement programs—including better guidance and support for parents, leading to better mathematics learning outcomes for children.

Acknowledgements

References

Alwin, D. F., & Beattie, B. A. (2016). The KISS principle in survey design: question length and data quality. *Sociological methodology*, *46*(1), 121-152.

Artino Jr, A. R., La Rochelle, J. S., Dezee, K. J., & Gehlbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Medical teacher*, *36*(6), 463-474.

Artino, A. R., Phillips, A. W., Utrankar, A., Ta, A. Q., & Durning, S. J. (2018). "The questions shape the answers": assessing the quality of published survey instruments in health professions education research. *Academic Medicine*, *93*(3), 456-463.

Bandura, A. (1977). *Social learning theory.* Prentice Hall.

Barclay, D. W., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adaptation and use as an illustration. *Technology Studies, 2*(2), 285-309.

Betts, A. (2021). The RESET Framework: Examining critical factors in parent-child math participation. In the *IAFOR International Conference on Education–Hawaii 2021 Official Conference Proceedings.* The International Academic Forum (IAFOR). http://25qt511nswfi49iayd31ch80-wpengine.netdna-ssl.com/wp-content/uploads/papers/iicehawaii2021/IICEHawaii2021_59354.pdf

Betts, A., Thai, K. P., Jacobs, D., & Li, L. (2020). Math readiness: Early identification of preschool children least ready to benefit from formal math instruction in school. In the *IAFOR International Conference on Education–Hawaii 2020 Official Conference Proceedings.* The International Academic Forum. http://25qt511nswfi49iayd31ch80-wpengine.netdna-ssl.com/wp-content/uploads/papers/iicehawaii2020/IICEHawaii2020_55552.pdf

Bhatt, S., & Shiva, A. (2020). Empirical examination of the adoption of Zoom software during COVID-19 pandemic: Zoom TAM. *Journal of Content, Community & Communication*, *12*(6), 70-88

Blevins-Knabe, B. (2016). Early mathematical development: How the home environment matters. In Blevins-Knabe & Berghout Austin, A.M. (Eds.) *Early childhood mathematics skill development in the home environment*, (pp. 7-28). Springer International Publishing.

Bradley, R. H. (1982). The HOME inventory: A review of the first fifteen years. In N. J. Anastasiow, W. K. Frankenburg & A. W. Fandal (Eds.), *Identifying the developmentally delayed child* (pp. 87–100). University Park Press.

Bronfenbrenner, U. (1992). *Ecological systems theory*. Jessica Kingsley Publishers.

Bywood, L. (2020). Technology and Audiovisual Translation. In *The Palgrave Handbook of Audiovisual Translation and Media Accessibility* (pp. 503-517). Palgrave Macmillan, Cham.

Calvert, M., & Peckman, T. (2022). Thinking Outside the Box of Evaluation Platforms: Adapting Qualtrics for Virtual 4-H Judging Competitions. *The Journal of Extension, 60*(1), Article 14. https://doi.org/10.34068/joe.60.01.15

Cankaya, O., & LeFevre, J.-A. (2016). The home numeracy environment: What do cross-cultural comparisons tell us about how to scaffold young children's mathematical skills? In B. Blevins-Knabe & A.M. Berghout-Austin (Eds.) *Early childhood mathematics skill development in the home environment* (pp. 87-104). Springer International Publishing.

Childs, K. (2013). *A comparison of students' and parents' mathematics attitudes and achievement at a private historically black university*. [Doctoral dissertation, University of Central Florida]. Electronic Theses and Dissertations, 2004-2019. 2828. https://stars.library.ucf.edu/etd/2828

Chin,W.W. (1998).The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-336). Lawrence Erlbaum Associates.

Chin,W.W., & Newsted, P. R. (1999). Structural Equation Modeling analysis with Small Samples Using Partial Least Squares. In Rick Hoyle (Ed.), *Statistical strategies for small sample research* (pp. 307-341). Sage Publications.

Claessens, A., & Engel, M. (2013). How important is where you start? Early mathematics knowledge and later school success. *Teachers College Record*, *115*(6), 1–29.

Clements, D. H., & Sarama, J. (2014). *Learning and teaching early math: The learning trajectories approach*. Routledge.

Daucourt, M. C., Napoli, A. R., Quinn, J. M., Wood, S. G., & Hart, S. A. (2021, accepted). The Home Math Environment and Children's Math Achievement: A Meta-Analysis. *Psychological Bulletin.*

de Brey, C., Musu, L., McFarland, J., Wilkinson-Flicker, S., Diliberti, M., Zhang, A., Branstetter, C., and Wang, X. (2019). *Status and trends in the education of racial and ethnic groups 2018 (NCES 2019-038)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from https://nces.ed.gov/pubsearch/

Desimone, L.M., & Le Floch, K. C. (2004). Are we asking the right questions? Using cognitive interviews to improve surveys in education research. *Educational Evaluation and Policy Analysis, 26*(1), 1-22.

Doepken, D., Lawsky, E., & Padwa, L. (1993, June). Modified fennema-sherman attitude scales. In *Woodrow Wilson Gender Equity in Mathematics and Science Congress. Princetown, NJ.*

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, *43*(6), 1428–1446.

Dunst, C.J., Hamby, D.W., Wilkie, H., & Dunst, K.S. (2017). Meta-analysis of the relationship between home and family experiences and young children's early numeracy learning. In S. Phillipson, A. Gervasoni, & P. Sullivan (Eds.) *Engaging families as children's first mathematics educators: International perspectives* (pp. 105-125). Springer.

Eutsler, J., & Lang, B. (2015). Rating scales in accounting research: The impact of scale points and labels. *Behavioral Research in Accounting*, *27*(2), 35-51.

Fennema, E., & Sherman, J.A., (1976). Fennema-Sherman Mathematics Attitude Scale: Instruments designed to measure attitudes toward the learning of mathematics by females and males. *JAS Catalog of Selected Documents in Psychology, 6,* 31.

Gac-Artigas, A. (2017, October 17). *Education's greatest and most underutilized natural resource*. America's Promise Alliance. https://www.americaspromise.org/opinion/educations-greatest-and-most-underutilized-natural-resource

Herts, J. B., Beilock, S. L., & Levine, S. C. (2019). The role of parents' and teachers' math anxiety in children's math learning and attitudes. *Mathematics anxiety: What is known and what is still to be understood*, 190-210. Taylor & Francis.

Hoover-Dempsey, K., & Sandler, H. (1995). Parental involvement in children. *Teachers college record*, *97*(2), 310-331.

Hoover-Dempsey, K.V., & Sandler, H.M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, 67(1), 3-42.

Hoover-Dempsey, K.V., Walker, J.M.T., Sandler, H.M., Whetsel, D., Green, C.L., Wilkins, A.S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106*(2), 105-130.

Liu, F., Black, E., Algina, J., Cavanaugh, C., & Dawson, K. (2010). The validation of one parental involvement measurement in virtual schooling. *Journal of Interactive Online Learning*, *9*(2).

Lukie, I. K., Skwarchuk, S. L., LeFevre, J. A., & Sowinski, C. (2014). The role of child interests and collaborative parent–child interactions in fostering numeracy and literacy development in Canadian homes. *Early Childhood Education Journal*, *42*(4), 251-259.

Marjoribanks, K. (1976). Social learning theory of the family: An analysis. *Psychology in the Schools, 13*(4). 457-462.

Mowder, B. A. (2005). Parent development theory: Understanding parents, parenting perceptions and parenting behaviors. *Journal of Early Childhood and Infant Psychology*, *1*, 45-65.

Muir, T. (2018). Using mathematics to forge connections between home and school. In V. Kinnear, M.W. Lai, & T. Muri (Eds.), *Forging connections in early mathematics teaching and learning* (pp. 173-190). Springer.

Nguyen, T., Watts, T.W., Duncan, G.J., Clements, D.H., Sarama, J.S., Wolfe, C., & Spitler, M.E. (2016). Which preschool mathematics competencies are most predictive of fifth grade achievement? *Early Childhood Research Quarterly, 36*, 550-560.

Phillipson, S., Richards, G., & Sullivan, P. (2017). Parental perceptions of access to capitals and early mathematical learning: some early insights from Numeracy@ Home project. In *Engaging families as children's first mathematics educators* (pp. 127-145). Springer, Singapore.

Qualtrics. (2021, May 14). *Qualtrics homepage*. https://www.qualtrics.com/core-xm/survey-software/

Reed, R. P., Jones, K. P., Walker, J. M., & Hoover-Dempsey, K. V. (2000). Parents' Motivations for Involvement in Children's Education: Testing a Theoretical Model. Paper presented at the *Annual Conference of the American Educational Research Association.* AERA.

Rothschild, M., & Sheehan, K. (unpublished). *Parent sentiments survey*. Age of Learning, Inc.

Sonnenschein, S., Baker, L., Moyer, A., & LeFevre, S. (2005). Parental beliefs about children's reading and math development and relations with subsequent achievement. *Society for Research in Child Development, Atlanta, GA*.

Tapia, M. (1996). *The Attitudes toward Mathematics Instrument*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Tuscaloosa, AL, November 6-8, 1996.

Tapia, M., & Marsh II, G. E. (2004). An instrument to measure mathematics attitudes. *Academic exchange quarterly*, *8*(2), 16-21.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2,* 53-55.

Thai, K. P., Betts, A. L., & Gunderia, S. (2022). Personalized Mastery-Based Learning Ecosystem: A New Paradigm for Improving Outcomes and Defying Expectations in Early Childhood. In *Handbook of Research on Innovative Approaches to Early Childhood Development and School Readiness* (pp. 665-694). IGI Global

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey responses*. Cambridge University Press.

Vygotsky, L. (1986). *Thought and language: Newly revised and edited.* A. Kozulin (Ed). Cambridge, MA: The Massachusetts Institute of Technology.

Walker, J.M.T., Wilkins, A.S., Dillaire, J.R., Sandler, H.M., Hoover-Dempsey, K.V. (2005). Parental involvement: Model revision through scale development. *The Elementary School Journal, 106*(2). 85-104.

Walker, J. M., Shenker, S. S., & Hoover-Dempsey, K. V. (2010). Why do parents become involved in their children's education? Implications for school counselors. *Professional School Counseling*, *14*(1),

Willis, G., Royston, P., & Bercini, D. (1991). The use of verbal report methods in the development and testing of survey questionnaires. *Applied Cognitive Psychology 5*, 251–267.

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Envisioning the Future: Ten Keys to Enhance Resilience Predictors Among Inmates

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Abstract
This study examines the impact of the program Envisioning the Future (EF) by Patrizio Paoletti Foundation on the predictors of resilience among male inmates. EF offers ten keys encompassing the main neuroscientific findings and daily practices for resilience. With the collaboration of the University of Padua, EF was implemented in Padua prison during the Covid-19 pandemic. Thus, it presented 9 online sessions, led by trainers in Pedagogy for the Third Millennium (PTM), targeted at the inmates' group. Inmates completed scientific questionnaires on resilience, coping strategies, and self-efficacy in managing positive and negative emotions. Two linear regression models were computed to identify the resilience predictors: (i) at the beginning of EF (n=24, mean age=42.89, mean of years in prison=5.81), only low avoidance predicted inmates' resilience (β=-.64, p<.05); (ii) at the end of EF (n=24, mean age=42.79, mean of years in prison=5.89), the constellation of factors predicting resilience enriched, including low avoidance (β =-.34, p<.05), self-efficacy in regulating positive emotions (β =.51, p<.05), cognitive flexibility (β =.56, p<.05), and social support (β =.56, p<.05). Results highlight that providing inmates with notions and practical suggestions about resilience, transmitted through EF, strengthens the constellation of predictors of resilience in a challenging context like the prison.

Keywords: Inmates, Prison, Resilience

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Introduction

The multiplicity of definitions in literature makes resilience difficult to define (White & McCallum, 2021). Although for many years psychologists defined resilience as the capacity to bend without breaking, a metaphor inspired by metal physics, to date it is recognized that traumas hinder humans to return to the same biopsychosocial states they were before the adverse event (Allen, 2011). Thus, resilience can be described as the individual capacity to adaptively handle adversities (Luthar et al., 2006), exhibiting emotional stamina (Wagnild & Young, 1990) and being strengthened by the negative event (Grotberg, 1995; Cyrulnik, 2001). A resilient individual can ameliorate from a traumatic experience, discovering her/his true potential and reprogramming the future (Connor and Davidson, 2003). Noticeably, resilience is a dynamic and ever-evolving variable (Herrman et al., 2011) in human lives: it results from the interaction of genes, coping skills, environmental factors, innate individual resources that can change during the life cycle (Masten, 2001; Grych et al., 2015).In the light of these premises, it is possible to hypothesize that resilience can enhance the whole society's wellbeing since people can be trained to be more resilient (O'Doughterty, 2012), even in the most complex and challenging conditions, like incarceration.

The context of prison is complex (Ferreccio & Vianello, 2014) and it fosters psychological distress (Syker, 1958) in terms of depression, psychotic symptoms, substance abuse, post-traumatic stress disorders (Fazel et al., 2016; Baranyi et al., 2018; Fovet et al., 2022). Inmates' conditions were worsened by the Covid-19 pandemic: in multiple countries (e.g., UK and Italy) the rate of self-harm, psychiatric symptoms, aggressions, and suicide attempts by prisoners peaked in the last two years (Hewson et al., 2020; Associazione Antigone, 2011). Three main pandemic-related problems aggravated inmates' situation: (i) an increased perception of isolations from family and friends (Vignali, 2021), (ii) a major difficulty in accessing psychological support (Johnson et al., 2021; Ronco, 2020), (iii) a delay in trials caused by the emergency, postponing the release dates of many inmates (Hewson et al., 2020). In this framework, training inmates in resilience can help them to adaptively handle the contextual adversities, aggravated by the health emergency, indirectly facilitating the reintegration in the social community after-release (Lorenzon, 2020).

The main predictors of inmates' resilience and intervention to improve them

In the normative population one of the main factors to promote resilience is coping. Coping can be described as the personal way or "style" a person manages stressful events (Cramer, 1998). It has been shown that a problem-oriented coping (De la Fuente et al., 2017) significantly predicts resilience because it allows to actively counteract the stressors and their consequences. Flexibility is also a coping modality associated with resilience because it enables individuals to adjust their values and goals accordingly with the events (Hayes et al., 2006). Finally, seeking for social support predicts resilience because, counting on a network of personal and significative relationships increases individuals' capacity to deal with difficulties and trauma (Ozbay et al., 2007; Sippel et al., 2015).

Another predictor of resilience, commonly studied in the normal population, is self-efficacy because it allows goal-attainment (Judge & Bono, 2001). More specifically, self-efficacy in managing emotions, in terms of intensity and frequency of negative and positive effects (Caprara et al., 2008; Perasso & Velotti, 2020) crucially enhances resilience in both clinical and subclinical populations (Baghjari et al., 2017; Mestre et al., 2017; Arici-Özcan et al., 2019).

When it comes to investigate resilience in prison, it is often investigated as a predictor itself in association with: (i) higher mental health (Sygit-Kowalkowska et al., 2017) (ii) lower distress (Wolff & Caravaca Sánchez, 2019). The predictors of resilience among inmates have not been investigated much yet in quantitative research. However, literature on war prisoners' profiles optimism, social support, and capacity to re-narrate one's experience as the determinants of long-term resilience (Segovia et al., 2012; Maercker et al., 2013). Plus, longitudinal qualitative evidence on the juvenile penal circuit profiles the following characteristics as the ones necessary for reintegration into society and fully recover from the previous experiences: optimism, determination, future orientation, clear life goals (Todis et al., 2001). As mentioned, only a few studies investigated the predictors of resilience among adult inmates. The main findings show that the capacity of making sense of past traumatic experiences (e.g., sexual abuse) determines the prisoners' resilience because it enables to contextualize memories and engage in significant and supportive relationships with others (Bradley & Davino, 2007). Religiosity also can predict inmates' resilience levels because trusting in God can help adaptation to prison's difficulties (Hanik et al., 2021).

Focusing on the interventions aimed at promoting a resilient response in this population is equally relevant to comprehend resilience predictors in prison. In the normative population, individual and group psychotherapy (e.g., mindfulness-based therapy, cognitive behavioral therapy, acceptance commitment therapy) can promote resilience significantly (Helmreich et al., 2017). For prisoners, Cognitive Behavioral Therapy, Acceptance and Commitment Therapy, and integrated forms of therapy based on spirituality seem to be the more effective approaches in improving resilience levels (Rezaei & Mousavi, 2019; Budiyoo & Sugiharto, 2020; Valizadeh et al., 2020). Beyond psychotherapy, evidence in favor of other strategies (e.g., such as neuropsychopedagogical intervention) to enhance inmates' resilience is not known yet.

Envisioning the Future: A neuropsychopedagogical intervention to promote resilience

Envisioning the Future (EF) is one of the rare study-experiences (Augelli et al., 2017; Busetti et al., 2018; Galli et al., 2018) to promote prisoners' well-being through education and, to date, it is the first Italian neuro-psycho-pedagogical intervention working on inmates' resilience. EF was ideated by Patrizio Paoletti Foundation basing on the interdisciplinary background of Pedagogy for the Third Millennium (PTM) (Paoletti, 2008) and in the framework of the Sphere Model of Consciousness (SMC) (Paoletti, 2020; Paoletti & Dotan Ben Soussan, 2019). EF aims at restoring persons' hope in the future, increasing physical, psycho-emotional, relational, spiritual, and work resources of individuals (Snyder, 2000; Paoletti, 2008; Maculan et al., 2022; Di Giuseppe et al., 2023). The main aim of the intervention is triggering the transition from the reactive mind to the conscious mind (Paoletti, 2008). It's possible to promote such transition, through theoretical and practical notions on (i) how the brain works and reacts to stress, (ii) how individuals can transform emotions (iii) training with practical tools for self-improvement and self-education. While the reactive mind automatically responds towards environmental stimuli, triggering stress and anxiety, the conscious mind, based on prefrontal cortex activities, favours awareness, emotion regulation and the capacity to reprogram the individual's future.

This transition is crucial among prisoners because it is in line with their need to rethink their lives from the past to the present, to the future. EF is a thematic pathway including ten keys to resilience (see Table 1) that are based on interdisciplinary studies on resilience (Korb, 2015; Tabibnia & Radecki, 2018; Paoletti, 2019; Tabibnia, 2020) to examine how it is

possible to cover and learn from stress and uncertainty and, training in daily life through specific exercises.The Ten-Keys were used in emergency and challenging context like earthquake survivors (Di Giuseppe, in Press), juvenile penal justice educators during Covid-19 pandemic (Paoletti et al., 2022), and inmates (Maculan et al., 2022).

Key	Content	Neuropsychopedagogical Principle
(1) Take cover in front of what you can control and make small decisions. (2) Identify an attainable, exciting, measurable goal. (3) Several times a day become aware of your posture.	Body-scan and relaxation, guided visualizations, listening to the silence and to one's own breath, bringing one's attention back to the here and now, decision-making.	Observation and Self-observation (Paoletti & Selvaggio, 2011).
(4) Be inspired by stories. (5) Ask yourself what is important. (6) Cultivate gratitude.	Training in self-motivation, listening to one's most intimate preferences, learning to cultivate positive emotions and to manage negative emotions (e.g., gratitude), following resilience role-models, being an active agent.	Mediation (Paoletti & Selvaggio, 2012).
(7) Live the other as a resource, cultivate and expand your social network. (8) Cultivate curiosity.	Listening, sharing experiences, enhancing the resources of the group to cope together with events, constant learning from everything and from every experience.	Translation (Paoletti & Selvaggio, 2013).
(9) Practice a few minutes of silence. (10) Embrace and transform: before bedtime, generate your tomorrow today.	Exercise to improve the quality of sleep, daily and constant practice of intentional silence, meditation, proactive storytelling of daily life, self-programming, and foreshadowing of the future.	Normalization (Paoletti & Selvaggio, 2013).

Table 1: The Ten Keys for Resilience by Fondazione Patrizio Paoletti

Noticeably, EF is innovatively bringing meditation practices (Paoletti, 2018) into an Italian prison, accordingly with an extended body of research attesting the benefits of meditation among inmates in terms of emotion regulation, prevention of recidivism, and biopsychosocial wellbeing (Vannoy et al., 2004; Rucker, 2005; Samuelson et al., 2007; Sumter et al., 2009; Perelman et al., 2012; Dafoe & Stermac, 2013; Kristofersson & Kaas, 2013; Griera & Clot-Garrell, 2015).

Study Aim

In the light of these premises, the present research is targeted at the exploration of the predictors of inmates' resilience. Changes in the constellation of predictors of resilience from before EF to after EF will be measured and discussed.

Method

Participants

The study sample is constituted by the inmates of the Padua prison willing to take part in EF sessions and the related survey. Twenty-four inmates (M=100%; average age = 42.89, SD = 9.53; average years of imprisonment already served = 5.81, SD = 5.07) completed the survey before the EF programme (Group PRE-EF). Twenty-four inmates (M=100%; average age = 42.79, SD = 10.34; average years of imprisonment already served = 5.89, SD = 4.18) completed the same survey after the EF programme (Group POST-EF).

Measures

The survey encompassed four scientific questionnaires: i. The Resilience Scale-14 (RS14; Wagnild & Young, 1993; Callegari et al., 2016): measuring individuals' emotional stamina through 14 items on a Likert scale from 1 to 7 (1=strongly disagree, 7=strongly agree), assessing different dimensions of resilience such as personal purpose, perseverance, self-confidence, equanimity and existential loneliness. ii. The Connor-Davidson Resilience Scale-10 (CD-RISC-10; Connor & Davidson, 2003; Di Fabio & Palazzeschi, 2012; Ehrich, Mornane & Powern, 2017): measuring the level of resilience as the ability to cope with stress, investigating subdimensions such as flexibility, self-efficacy, emotional regulation, optimism, cognitive focus, through 10 items on a Likert scale from 1 to 5 (1=not at all true, 5=almost always true). iii. The Scales of Personal Self-efficacy in the Management of Negative and Positive Emotions (APEN/A - APEP/A; Caprara & Gerbino, 2001) measuring the level of personal self-efficacy in the management of both negative and positive emotions,): through 15 items on a Likert scale from 1 to 5 (1=not at all capable, 5=fully capable). iii. The COPE-NVI questionnaire (Coping Orientation to the Problems Experienced-New Italian Version) (Sica et al., 2008) investigating 5 dimensions of coping (e.g., social support; avoidance; positive attitude; problem orientation; transcendental orientation), through 60 items on a Likert scale from 1 to 4 (1=I usually don't do it, 4=I almost always do it).

Procedures

The study is part of the Envisioning the Future intervention which was created and conducted by the Fondazione Patrizio Paoletti at Padua's prison or "house of confinement" (in Italy, a penitentiary facility that hosts prisoners condemned with a final sentence higher than five years), thanks to the partnership of University of Padua and the collaboration of Padua's prison administration. The intervention obtained the approval of the University of Padua ethical committee. It was carried out between May 2021 and July 2021, when the prison was dealing with the pandemic emergency and overcrowding, hosting 500 inmates in a capacity of 440.

EF sessions were conducted by experts in the Pedagogy for the Third Millennium (PTM) (Paoletti, 2008; Paoletti, Selvaggio, 2012). The intervention was administered online, and it

included four live webinars (180 minutes each) and five lessons (60 minutes each), presenting notions and practical exercises about resilience, and illustrating "The Ten Keys to Resilience"(Table 1). Inmates assisted to the intervention from the prison auditorium; the presence of facilitators encouraged group interactions and questions from the participants. The remote modality of EF is in line with the "new normality" imposed by the pandemic (Bozkurt & Sharma, 2020), requiring a major digitalization of psychopedagogy (Bozkurt, 2022) not just to schools but also to all the contexts with people in need for educational interventions.

Analytic Plan

Two statistical models of linear regression were computed for the Group PRE-EF and the Group POST-EF. The dependent variable inputted is resilience in terms of "emotional stamina" (Wanglid & Young, 1990) as assessed by RS14. The predictors have been inputted in blocks: (i) block 1: self-efficacy in managing positive and negative emotions assessed with APEN and APEP (Caprara et al., 2008); (ii) block 2: coping in terms of social support, avoidance, problem orientation, transcendental orientation, positive attitude, measured with COPE-NVI; (iii) block 3: flexibility, self-efficacy, emotional regulation, optimism, cognitive focus, the resilience dimensions specifically focused on handling stress, measured by CD-RISC-10.

Results

The two linear regression models indicated a change in the constellation of resilience predictors. In Group PRE-EF, resilience was predicted exclusively by low avoidance (β=-.64, p<.05), with R^2=.69 (Table 2). In POST-EF resilience was not only associated with low avoidance (β=-.34, p<.05), but also predicted by self-efficacy in managing positive emotions (β=.51, p<.05) cognitive flexibility (β=.56, p<.05), and perceived social support (β=.56, p<.05), with R^2=.88 (Table 3).

	Beta	t	Sig.
Variables			
(Costant)		0,01	0,99
Self Efficacy in managing Negative emotions	0,1	0,41	0,69
Self Efficacy in managing Positive emotions	-0,19	-0,65	0,53
Social Support	0,45	2,03	0,07
Avoidance	-0,64	-2,82	,02*
Problem orientation	0,36	0,85	0,42
Trascendence orientation	-0,4	-1,48	0,17
Positive attitude	0,27	0,95	0,36
Fexibility	0,54	1,61	0,14
Self Efficacy	-0,59	-1,01	0,33
Emotion regulation	-0,13	-0,45	0,66
Optimis	0,84	2,11	0,06
Cognitive Focus	-0,54	-2,09	0,06

*Significancy level at p<.05

Table 2. Linear Regression for Group PRE-EF

	Beta	t	Sig.
Variables			
(Costant)		-0,19	0,85
Self Efficacy in managing Negative emotions	0,28	1,16	0,27
Self Efficacy in managing Positive emotions	0,5	3,26	,01*
Social Support	0,56	2,5	,03*
Avoidance	-0,34	-2,3	,04*
Problem orientation	-0,29	-1,6	0,14
Trascendence orientation	0,03	0,19	0,85
Positive attitude	0,01	0,05	0,96
Fexibility	0,57	2,93	,01*
Self Efficacy	0,23	0,65	0,53
Emotion regulation	-0,2	-0,93	0,37
Optimis	-0,45	-2,03	0,07
Cognitive Focus	-0,06	-0,25	0,81

*Significancy level at $p<.05$

Table 3. Linear Regression for Group POST-EF

Discussion

In Italy, Envisioning the Future (EF) is one of the few research-intervention experiences focused on inmates' wellbeing (Augelli et al., 2017; Busetti et al., 2018; Galli et al., 2018). Noticeably, EF is the first neuropsychopedagogic intervention to promote prisoners' resilience. The finding of the present research highlights that the basic resilience determinant of Padua's house of confinement inmates is low avoidance. Avoidance is the coping modality consisting in escaping from the problem and the related negative emotions (Cramer, 1998). Resilience cannot be stimulated by avoidance (Rutter, 1993) because this mechanism hinders a proactive search for solutions: in such a challenging context as prison, being capable of facing stressors, instead of escaping from them, predicts higher resilience.

After EF, inmates' constellation of resilience predictors resulted changed and enriched by other factors besides low avoidance. In line with literature attesting the link between social support and inmates' resilience (Jacoby & Kozie-Peak, 1997; Ozbay et al., 2007; Sippel et al., 2015), it is possible to interpret the result considering that EF increased the perceived social support by inmates by counteracting the social isolation, naturally associated with being far away from the family (Wallace et al., 2014), and exacerbated by Covid-19 health emergency (Hewson et al., 2020; Johnson et al., 2021). In fact, EF sessions used the group as a catalyst for positive change and self-improvement (Imel, 1999; Guarino & Serantoni, 2008), indirectly strengthening the sense of community and group belonging among prisoners (Wenger, 1999).

Another predictor of resilience emerging after EF is flexibility: the more a person can reframe her/his point of view through cognitive shifting, awareness, and open-mindedness, the more she/he will develop resilience in different life-domains (Kashdan & Rottenberg, 2010; McCracken et al., 2021). While this capacity is scarce in several psychopathological conditions, characterized by cognitive rigidity (Nolen-Hoeksema et al., 2008), flexibility is a protective factor against trauma consequences on mental health (Galatzer et al., 2012; Bryan et al., 2015) such as anxiety, depression, stress, and sleep disorders (Arslan & Allen, 2021;

McCracken et al., 2021). It is possible to speculate that EF, providing inmates with self-administrable exercises and self-training (e.g., meditation, silence), positively impacted on inmates' self-awareness and capacity to re-signify their own experience and prefigure their future (Paoletti, Selvaggio, 2011; 2012; 2013), in a more flexible and resilient way.

Finally, self-efficacy in managing positive emotions resulted a predictor of prisoners' resilience after EF. In a challenging environment like prison, threatening individuals' mental health (Sygit-Kowalkowska et al., 2017), and complicated by Covid-19 pandemic (Hewson et al., 2020; Johnson et al, 2021), having a high self-efficacy in managing emotions serves to modulate frequency and intensity of affects (Perasso & Velotti, 2020). The result can be explained in the light of EF impact in educating the prisoners to adaptively maximize positive emotions in their everyday life, besides the adversities.

Conclusion

Before Envisioning the Future intervention (EF), the only variable determining inmates' resilience was low-avoidance. After EF, low-avoidance, high flexibility, high self-efficacy in managing positive emotions, and perception of social support, reveal an improvement in the constellation of resources associated with prisoners' resilience. The main limitations of the study are: (i) the use of self-report questionnaires that may trigger social biases in respondents (Dicken, 1963); (ii) the lack of paired data of participants from pre to post intervention, that hindered the possibility to conduct longitudinal analysis of the impact of EF; (iii) the lack of a control group not participating to EF to furtherly corroborate the results. Notwithstanding these limitations, this is the first research in Italy deepening the effects of a neuropsychopedagogic intervention on inmates' resilience predictors. Since conducted from remote, EF also met the global needs for educational systems' digitalization related to the pandemic (Bozkurt & Sharma, 2020; Bozkurt, 2022). The study lays the groundwork for future research in the field of the factors that can predict resilience in a population at high risk for mental suffering like inmates, and it encourages the practice of neuropsychopedagogy in the prison's environment.

References

Allen, R. S., Haley, P. P., Harris, G. M., Fowler, S. N., & Pruthi, R. (2011). Resilience: Definitions, ambiguities, and applications. *Resilience in aging*, 1-13.

Arslan, G., & Allen, K. A. (2021). Exploring the association between coronavirus stress, meaning in life, psychological flexibility, and subjective well-being. *Psychology, Health & Medicine*, 1-12.

Arici-Ozcan, N., Cekici, F., & Arslan, R. (2019). The Relationship between Resilience and Distress Tolerance in College Students: The Mediator Role of Cognitive Flexibility and Difficulties in Emotion Regulation. *International Journal of Educational Methodology*, 5(4), 525-533.

Associazione Antigone (2021). *Il più alto tasso di suicidi dell'ultimo ventennio*. Report consultabile: https://www.rapportoantigone.it/diciassettesimo-rapporto-sulle-condizioni-di-detenzione/suicidi-e-eventi-critici/

Augelli, A., Cavagna, P., Leccese, L., & Oltolini, I. (2017). Scuola in carcere e formazione all'intraprendenza: uno spazio per pensarsi "altrimenti". *Epale Journal*, 15.

Baghjari, F., Saadati, H., & Esmaeilinasab, M. (2017). The relationship between cognitive emotion-regulation strategies and resiliency in advanced patients with cancer. *International Journal of Cancer Management*, 10(10).

Baranyi, G., Cassidy, M., Fazel, S., Priebe, S., & Mundt, A. P. (2018). Prevalence of posttraumatic stress disorder in prisoners. *Epidemiologic Reviews,* 40(1), 134-145.

Bozkurt, A., & Sharma, R. C. (2020). Education in normal, new normal, and next normal: Observations from the past, insights from the present and projections for the future. *Asian Journal of Distance Education,* 15(2), i-x.

Bozkurt, A. (2022). Resilience, adaptability, and sustainability of higher education: A systematic mapping study on the impact of the Coronavirus (Covid-19) pandemic and the transition to the new normal. *Journal of Learning for Development* (JL4D), 9(1), in press.

Bradley, R., & Davino, K. (2007). Interpersonal violence, recovery, and resilience in incarcerated women. *Journal of Aggression, Maltreatment & Trauma*, 14(1-2), 123-146.

Bryan, C. J., Ray-Sannerud, B., & Heron, E. A. (2015). Psychological flexibility as a dimension of resilience for posttraumatic stress, depression, and risk for suicidal ideation among Air Force personnel. *Journal of Contextual Behavioral Science*, 4(4), 263-268.

Budiyono, A., & Sugiharto, D. Y. B. (2020). Empirical Study: Cognitive Behavior Therapy (CBT) And Resilience of Prisoners before Being Released. *International Journal of Innovative Science and Research Technology,* 5,1085-1091.

Busetti, C., Cattaneo, A., Gotti, M. P., Vecchio, M., Previtali, N., Bussi, E., ... & Riglietta, M. (2018). Sviluppo di empowerment nella popolazione detenuta. L'efficacia dei gruppi informativo-motivazionali all'interno della Casa Circondariale di Bergamo. Analisi del triennio 2015-2017. *Mission-Open Access*, (50).

Callegari, C., Bertù, L., Lucano, M., Ielmini, M., Braggio, E., & Vender, S. (2016). Reliability and validity of the Italian version of the 14-item Resilience Scale. *Psychology Research and Behavior Management*, *9*, 277.

Caprara, G. V., & Gerbino, M. (2001). Autoefficacia emotiva: La capacità di regolare l'affettività negativa e di esprimere quella positiva. *GV Caprara (a cura di), La valutazione dell'autoefficacia, Trento, Erickson*.

Caprara, G. V., Di Giunta, L., Eisenberg, N., Gerbino, M., Pastorelli, C., & Tramontano, C. (2008). Assessing regulatory emotional self-efficacy in three countries. Psychological assessment, 20(3), 227.

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor Davidson resilience scale (CD RISC). *Depression and anxiety,* 18(2), 76-82.

Cramer, P. (1998). Coping and defense mechanisms: What's the difference?. *Journal of Personality,* 66(6), 919-946. DOI:10.1111/1467-6494.00037

Cyrulnik, B. (2001). Manifeste pour la résilience. *Spirale*, (2), 77-82.

Dafoe, T., & Stermac, L. (2013). Mindfulness meditation as an adjunct approach to treatment within the correctional system. *Journal of Offender Rehabilitation*, 52(3), 198-216.

De la Fuente, J., Fernández-Cabezas, M., Cambil, M., Vera, M. M., González-Torres, M. C., & Artuch-Garde, R. (2017). Linear relationship between resilience, learning approaches, and coping strategies to predict achievement in undergraduate students. *Frontiers in Psychology*, 8, 1039.

Di Fabio, A., & Palazzeschi, L. (2012). Connor-davidson resilience scale: psychometric properties of the italian version. *Counseling: Giornale Italiano Di Ricerca e Applicazioni* [Italian Journal of Research and Applications], 5(1), 101-109.

Di Giuseppe, T., Serantoni, G., Paoletti, P., Perasso, G. (2023). Un sondaggio a quattro anni da Prefigurare il Futuro, un intervento neuropsicopedagogico post-sisma [A survey four years after Envisioning the Future, a post-earthquake neuropsychopedagogic intervention]. *Orientamenti Pedagogici*. IN PRESS.

Dicken, C. (1963). Good impression, social desirability, and acquiescence as suppressor variables. *Educational and Psychological Measurement*, 23(4), 699-720.

Ehrich, J., Mornane, A., & Powern, T. (2017). Psychometric validation of the 10-item Connor-Davidson Resilience Scale. *Journal of applied measurement*.

Fazel, S., Hayes, A. J., Bartellas, K., Clerici, M., & Trestman, R. (2016). Mental health of prisoners: prevalence, adverse outcomes, and interventions. *The Lancet Psychiatry*, 3(9), 871-881.

Ferreccio, V., & Vianello, F. (2014). Doing research in prison: How to resist institutional pressures. In *Reflexivity in Criminological Research* (pp. 259-274). Palgrave Macmillan, London. DOI:

Fovet, T., Wathelet, M., Amad, A., Horn, M., Belet, B., Benradia, I., ... & D'Hondt, F. (2022). Trauma exposure and PTSD among men entering jail: A comparative study with the general population. *Journal of Psychiatric Research*, 145, 205-212.

Freeman, S., & Seymour, M. (2010). 'Just waiting': The nature and effect of uncertainty on young people in remand custody in Ireland. *Youth Justice*, 10(2), 126-142.

Galatzer-Levy, I. R., Burton, C. L., & Bonanno, G. A. (2012). Coping flexibility, potentially traumatic life events, and resilience: A prospective study of college student adjustment. *Journal of Social and Clinical Psychology,* 31(6), 542-567.

Galli, R., Polla, A., Mosa, P., Botto, R., Lusi, M. G., & Novelli, G. (2018). Caregiver in carcere: avere cura di sé per avere cura dell'altro. *RICERCHE DI PSICOLOGIA*.

Griera, M., & Clot-Garrell, A. (2015). Doing yoga behind bars: A sociological study of the growth of holistic spirituality in penitentiary institutions. In *Religious diversity in European prisons* (pp. 141-157). Springer, Cham.

Grotberg, E. H. (1995). *A guide to promoting resilience in children: Strengthening the human spirit* (Vol. 8). The Hague, Netherlands: Bernard van leer foundation.

Grych, J., Hamby, S., & Banyard, V. (2015). The resilience portfolio model: Understanding healthy adaptation in victims of violence. *Psychology of Violence*, 5(4), 343.

Guarino, A., & Serantoni, G. (2008). Modelli di educazione alla salute. *Rapporti ISTISAN,* 8(1), 29-42.

Hanik, E. N., Maulida, R. F., & Erna, D. W. (2020). The relationship of religiosity with resilience of adult-assisted residents in community institutions. *Systematic Reviews in Pharmacy*, *11*(6), 1111-1115.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour research and therapy*, *44*(1), 1-25.

Helmreich, I., Kunzler, A., Chmitorz, A., König, J., Binder, H., Wessa, M., & Lieb, K. (2017). Psychological interventions for resilience enhancement in adults. *The Cochrane Database of Systematic Reviews*, 2017(2).

Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience?. *Canadian journal of psychiatry. Revue canadienne de psychiatrie*, 56(5), 258–265.

Hewson, T., Shepherd, A., Hard, J., & Shaw, J. (2020). Effects of the COVID-19 pandemic on the mental health of prisoners. *The Lancet Psychiatry*, *7*(7), 568-570.

Imel, S. (1999). Using groups in adult learning: Theory and practice. *Journal of Continuing Education in the Health Professions*, 19(1), 54-61.

Jacoby, J. E., & Kozie Peak, B. (1997). The benefits of social support for mentally ill offenders: prison to community transitions. *Behavioral Sciences & the Law*, 15(4), 483-501.

Johnson, L., Gutridge, K., Parkes, J., Roy, A., & Plugge, E. (2021). Scoping review of mental health in prisons through the COVID-19 pandemic. *BMJ open*, *11*(5), e046547.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. Journal of applied Psychology, 86(1), 80.

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, 30(7), 865-878.

Korb, A. (2015). *The upward spiral: Using neuroscience to reverse the course of depression, one small change at a time.* New Harbinger Publications.

Kristofersson, G. K., & Kaas, M. J. (2013). Stress management techniques in the prison setting. *Journal Of Forensic Nursing*, 9(2), 111-119.

Lorenzon, J. (2020). Dalla matematica della recidiva alla complessità del fine pena. *Autonomie locali e servizi sociali,* 43(3), 631-644.

Luthar, S. S., Sawyer, J. A., & Brown, P. J. (2006). Conceptual issues in studies of resilience: Past, present, and future research. *Annals of the New York Academy of Sciences*, 1094, 105.

Maculan A., Di Giuseppe T., Vianello F., Vivaldi S. (2022). Narrazioni e risorse. Gli operatori del sistema penale minorile al tempo del covid. *Autonomie locali e servizi sociali*. IN PRESS.

Maercker, A., Gäbler, I., O'Neill, J., Schützwohl, M., & Müller, M. (2013). Long-term trajectories of PTSD or resilience in former East German political prisoners. *Torture*, 23(1), 15-27. DOI:10.5167/uzh-71813

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist,* 56(3), 227.

McCracken, L. M., Badinlou, F., Buhrman, M., & Brocki, K. C. (2021). The role of psychological flexibility in the context of COVID-19: Associations with depression, anxiety, and insomnia. *Journal of Contextual Behavioral Science*, 19, 28-35.

Mestre, J. M., Núñez-Lozano, J. M., Gómez-Molinero, R., Zayas, A., & Guil, R. (2017). Emotion regulation ability and resilience in a sample of adolescents from a suburban area. *Frontiers in Psychology,* 8, 1980.

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3(5), 400-424.

O'Dougherty Wright M., Masten A. S., Narayan A. J.(2012**),** *Resilience Processes in Development: Four Waves of Research on Positive Adaptation in the Context of Adversity***,** Handbook of Resilience in Children pp 15-37.

Ozbay, F., Johnson, D. C., Dimoulas, E., Morgan III, C. A., Charney, D., & Southwick, S. (2007). Social support and resilience to stress: from neurobiology to clinical practice. *Psychiatry (Edgmont)*, *4*(5), 35.

Paoletti, P. (2008*). Crescere nell'eccellenza.* Roma: Armando editore.

Paoletti, P., & Selvaggio, A. (2011). *Osservazione*. Quaderni di Pedagogia per il terzo Millennio. Perugia: Edizioni 3P.

Paoletti, P., and Selvaggio, A. (2011). *Mediazione*. Quaderni di Pedagogia per il Terzo Millennio. Perugia: Edizioni 3P.

Paoletti, P., and Selvaggio, A. (2012). *Traslazione*. Quaderni di Pedagogia per il Terzo Millennio. Perugia: Edizioni 3P.

Paoletti, P., & Selvaggio, A. (2013). *Normalizzazione*. Quaderni di Pedagogia per il Terzo Millennio. Perugia: Edizioni 3P.

Paoletti, P. (2018). *One Minute Meditation.* Medidea: Inspiring People.

Paoletti, P., & Soussan, T. D. B. (2019). The sphere model of consciousness: from geometrical to neuro-psycho-educational perspectives. *Logica Universalis*, 13(3), 395-415.

Paoletti, P., Di Giuseppe, T., Lillo, C., Serantoni, G., Perasso, G., Maculan, A., Vianello, F. (2022). La resilienza nel circuito penale minorile in tempi di pandemia: un'esperienza di studio e formazione basata sul Modello Sferico della Coscienza su un gruppo di educatori. *Narrare i Gruppi, latest – (10)* 2022, 1-21.

Perasso, G., & Velotti, P. (2020). Difficulties in emotion regulation scale. *Encyclopedia of personality and individual differences*, 1132-1134.

Perelman, A. M., Miller, S. L., Clements, C. B., Rodriguez, A., Allen, K., & Cavanaugh, R. (2012). Meditation in a deep south prison: A longitudinal study of the effects of Vipassana. *Journal of Offender Rehabilitation*, *51*(3), 176-198.

Rezaei, S., & Mousavi, S. V. (2019). The effect of monotheistic integrated psychotherapy on the levels of resilience, anxiety, and depression among prisoners. *Health, Spirituality and Medical Ethics,* 6(1), 2-10.

Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal Of Clinical Psychology*, 58(3), 307-321

Ronco, D. (2020). Il principio di equivalenza delle cure in carcere: appunti per una rivisitazione oltre l'emergenza. *Autonomie locali e servizi sociali*, 43(3), 495-507.

Rucker, L. (2005). Yoga and restorative justice in prison: An experience of "response ability to harms". *Contemporary Justice Review*, *8*(1), 107-120.

Rutter, M. (1993). Resilience: Some conceptual considerations. *Journal of Adolescent Health*, 14(8), 626–631.

Samuelson, M., Carmody, J., Kabat-Zinn, J., & Bratt, M. A. (2007). Mindfulness-based stress reduction in Massachusetts correctional facilities. *The Prison Journal,* 87(2), 254-268.

Segovia, F., Moore, J. L., Linnville, S. E., Hoyt, R. E., & Hain, R. E. (2012). Optimism predicts resilience in repatriated prisoners of war: A 37 year longitudinal study. *Journal of Traumatic Stress,* 25(3), 330-336.

Sica, C., Magni, C., Ghisi, M., Altoè, G., Sighinolfi, C., Chiri, L. R., & Franceschini, S. (2008). Coping Orientation to Problems Experienced-Nuova Versione Italiana (COPE-NVI): uno strumento per la misura degli stili di coping. *Psicoterapia cognitiva e comportamentale,* 14(1), 27.

Sippel, L. M., Pietrzak, R. H., Charney, D. S., Mayes, L. C., & Southwick, S. M. (2015). How does social support enhance resilience in the trauma-exposed individual?. *Ecology and Society*, *20*(4).

Sykes, G. M. (1958). The Society of Captives. A Study of a Maximum-Security Prison, Princeton: Princeton University Press

Snyder, C.R. (2000). *Handbook of Hope Theory, Measures and Applications*. San Diego: Academic Press.

Sygit-Kowalkowska, E., Szrajda, J., Weber-Rajek, M., Porażyński, K., & Ziółkowski, M. (2017). Resilience as a predicator of mental health of incarcerated women. *Psychiatria Polska*, 51(3), 549-560.

Sumter, M. T., Monk-Turner, E., & Turner, C. (2009). The benefits of meditation practice in the correctional setting. *Journal of Correctional Health Care*, 15(1), 47-57.

Tabibnia, G. (2020). An affective neuroscience model of boosting resilience in adults. *Neuroscience & Biobehavioral Reviews, 115, 321-350.*

Tabibnia, G., & Radecki, D. (2018). Resilience training that can change the brain. *Consulting Psychology Journal: Practice and Research,* 70(1), 59.

Todis, B., Bullis, M., Waintrup, M., Schultz, R., & D'Ambrosio, R. (2001). Overcoming the odds: Qualitative examination of resilience among formerly incarcerated adolescents. *Exceptional Children*, 68(1), 119-139.

Valizadeh, S., Makvandi, B., Bakhtiarpour, S., & Hafezi, F. (2020). The Effectiveness of" Acceptance and Commitment Therapy"(ACT) on resilience and cognitive flexibility in prisoners. *Journal of Health Promotion Management*, 9(4), 78-89.

Vannoy, S. D., & Hoyt, W. T. (2004). Evaluation of an anger therapy intervention for incarcerated adult males. *Journal of Offender Rehabilitation,* 39(2), 39-57.

Vignali, C. (2021). Il carcere italiano di fronte al coronavirus: tra criticità e resilienza. *Form@re, 21*(3).

Wallace, D., Fahmy, C., Cotton, L., Jimmons, C., McKay, R., Stoffer, S., & Syed, S. (2016). Examining the role of familial support during prison and after release on post-incarceration mental health. *International Journal of Offender Therapy and Comparative Criminology*, 60(1), 3-20.

Wagnild, G., & Young, H. M. (1990). Resilience among older women. *Image: The Journal of Nursing Scholarship,* 22(4), 252-255.

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric. *Journal of nursing measurement*, 1(2), 165-17847.

Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*. Cambridge university press.

White M. A., McCallum F. (2021), *Wellbeing and Resilience Education - COVID-19 and Its Impact on Education, Routledge,* Taylor & Francis.

Wolff, N., & Caravaca Sánchez, F. (2019). Associations among psychological distress, adverse childhood experiences, social support, and resilience in incarcerate men. *Criminal Justice and Behavior*, 46(11), 1630-1649.

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Interpreting International Students' Experiences in Terms of Their Higher Education Academic Integration

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Abstract

Internationalization of higher education in Central European countries is increasing. In addition to their quality of education, higher education institutions are taking advantage of its geographical location, attracting foreign students into their corpus maximizing a multicultural environment. Research is needed in the field of international students' experiences from central European countries. Therefore, the present report will explore the qualitative methodological part of a research conducted at a University in Eastern Hungary. This study uses structured interviews, the chosen participants should have active status and belong to the countries and faculties which surpass one hundred students in both categories. The data was analyzed using thematic analysis method and the findings show that international students' academic integration has four factors that take place in their satisfaction: rankings, teacher-student relationship, peer-support, and curriculum. The results of the present study are of interest for the university under study itself, for education organizations in Hungary, and recruiters of international students.

Keywords: Student Experience, Academic Integration, International Students, Internationalization

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Introduction

The present research report contains the information of one part of a whole research study. The complete study explores the topics of international students' integration and acculturation. However, the scope of the matter in this current study is the academic integration. The present findings are derived from the analysis of structured interviews conducted to nineteen students from different nationalities. The interview had three main sections and only the first one will be the interest to solve the following research question: What do international students' experiences reveal about their academic integration? The objective is to understand the students' circumstances since the selection of their university, as well as their process while studying in a foreign country. This information will be of interest for university teachers, and future international students to know internationalization on higher education from firsthand informants.

In this article, the information provided contains the concept of academic integration and the methodological description from the data collection to the discussion section.

Academic integration

From the different interpretations and concepts of academic integration, in this article we will consider Tinto's perspective. His ideas are in the field of drop out, student persistence and commitment to their institution. According to Tinto (1975), this concept refers to the students' formal education. Examples could be the communication between the faculty and staff as well as academic achievements and performance. The latter ones can be measures through grade point average and intellectual development during the study period. On the other hand, academic performance, according to Baker and Siryk (1999), is influenced by academic integration, and within it, they identified four main concepts, namely   academic adjustment, social   adjustment, personal   and   emotional adjustment, and attachment.

The first two aspects are reflected in this paper. The academic adjustment refers to students' satisfaction with the academic environment meaning the teachers, and the curriculum. On the other hand, social adjustment, has to do with the interpersonal demands of dealing with others such as working in groups with their classmates.

Methodological approach

The framework in which this study is delimited to answer the research question is within the qualitative paradigm. The reason for choosing this paradigm is because within it, we can choose a tool that can provide sustainable data and be able to understand from the participants' voices the realities and experiences studying abroad.

Interviews are one of the most recognized forms of qualitative research method. The essence of the study considers a 'humanistic' approach (Plummer, 2005). Therefore, qualitative interviewing is designed to explore meaningful properties of the students' academic reality using an established structured set of questions, this approach is the way in which participants can feel more confident and willing to share their experiences.

The context in which the research was conducted is being placed in the University of Debrecen in Hungary. The university hosts seven thousand twenty-three international students from one hundred twenty-two nationalities (University of Debrecen, 2022). Key

details to have in consideration are that nationalities are not evenly distributed; it means that there are countries that send more students than others and based on this information the selection criteria to choose which nationalities would be selected for interview was crucial. Those nationalities that surpass one hundred students in the city were considered for interview (It was a total of twenty countries).

Method of data collection

For the collection of data, the interview procedure was snowball sampling (Flick, 2009). This method is one of the most widely applied methods to find participants in qualitative research, and it has proven to be effective when researchers need to recruit hidden or hard to reach participants (Flick, 2009; Lichtman, 2013). They were asked to refer someone who fit the research criteria (Lichtman, 2013). Potential participants were contacted via e-mail, however, in these scenarios not everyone responds. The ideal situation was to reach one student from each faculty and attempt to have a variety of nationalities as possible to present multiple perspectives.

The first step for the collection of data started with the development of the qualitative interview. It had three sections. The first was about academic integration, the second section social integration and the last one about cultural experiences. It was also asked about their future as well as how the Covid-19 affected these previous three aspects. It was a well-developed structured interview guide which contained twenty-three questions. Nevertheless, when the participant said something that could be significant, extra questions were asked. From the previously mentioned sections only the first one takes place in the analysis of this study.

The interviews were set according to participants availability. As soon as people were contacted, a google meet link was sent. The reason to do interviews online was because the research has been conducted in the middle of a pandemic situation and participants preferred this method to avoid being infected, as well to avoid displacement during the exam session and wintertime (when it is cold, and some students travel back to their countries). Three of the interviews were conducted in person because the circumstances facilitated it. Some respondents refer to other students as there were some nationalities difficult to reach. Fortunately, all the nationalities were reached except the Romanian. Nineteen interviews were conducted during the months of October 2021 through April 2022, 14 hours of individual interviews were transcribed verbatim and analyzed.

The requirement for participation was to not familiar with the Hungarian language or culture. In chart 1 the countries can be seen, the gender, the faculty, and major of the participant. Romania was excluded, as no student was found unfamiliar with Hungary.

Chart 1 Participant information

	Country	Gender	Faculty	Major
1	Romania	N/A		
2	Nigeria	M	Pharmacy	Pharmacy
3	Pakistan	F	Engineering	Engineering Management, MA
4	Iran	F	Dentistry	Dentistry
5	China	M	Medicine	General Medicine
5	Jordan	M	Food Science and Agriculture	Food Safety and Quality Engineering, MSc
7	Ukraine	M	Engineering	Professional Pilot
8	India	M	Science and Technology	Informatics, PhD
9	Egypt	M	Engineering	Mechatronics Engineering
10	Vietnam	F	Public Health	Public Health
11	Syria	F	Engineering/ Public Health	Biochemical Engineering/ Public Health
12	Israel	M	Medicine	General Medicine
13	Japan	F	Public Health	Public Health, BA
14	Brazil	M	Engineering	Engineering Management, MA
15	Kazakhstan	F	Medicine	General Medicine
16	South Korea	F	Engineering	Professional Pilot

17	Taiwan	M	Medicine	General Medicine
18	Mongolia	F	Public Health	Public Health, MA
19	Kenya	F	Engineering	Engineering Management, MA
20	Iraq	M	Computer Science	Computer Science, PhD

Method of analysis

After transcription, the method of data analysis used was thematic analysis developed by Braun and Clarke (2006). Their method was developed in the psychology field; however, it can be used in other areas of study. It is a method for identifying, organizing, and offering insight into, patterns of meaning (themes) across a dataset. This method has six phases to analyze the data (Braun & Clarke, 2012):

Phase 1: Familiarizing yourself with the data.
The first step, to get familiar with the data was to record the interviews with the permission of the participants and do the transcriptions.

Phase 2: Generating initial codes
After all the interviews were transcribed, they were saved in different files per country and the coding started. The analysis to interpret the participant's interview started by doing the coding by nationality.

Phase 3: Searching for themes
Once the codes were given to all the nineteen interviews, in the same way a new file was created under the name of each topic explored in the interview. In this section we will explore exclusively the academic integration information. A chart was created with three columns. One was country, the other for codes, and a last one which was integrated in a result of four themes.

Phase 4: Reviewing potential themes
Once themes were written, the codes and excerpts were double checked to determine if they fit into the theme or whether they should be moved into a different or a new one.

Phase 5: Defining and naming themes
During the analysis and when reading the excepts, it is important to not only group information, but also to do it carefully so that themes are related, but do not overlap each other and the participants information can reveal meaningful possibilities to name the themes.

Phase 6: Producing the report
The reporting part is the last step in which we write about the analysis, in this case, the initial purpose is to draft an article from the analysis of the academic integration and later, the analysis continues with the other two parts from the interview which are not included in this proceeding.

Discussion

The analysis of the data was narrowed into four categories. The experiences of the students can be reflected and summarized in the understanding of each category. Nevertheless, the information contained in this article is a summary, but well condensed about the perspectives and experiences students share. In connection to the excerpts extracted some of them are positive, others negative, and suggestions were also made, I am aware of the incorrect grammar, but I quoted word by word as expressed by the participant.

"I chose university of Debrecen because it has a high ranking"

A conference in Veszprem, Hungary in 2013 took place to discuss the concept of "ranking". One of the conclusions of the meeting was that ranking is usually for evaluating higher education institutions, but its accuracy is questioned. Different academics meet there and agreed that this concept is relevant in students' decision-making and that the point is not whether to rank or not, but how to rank. In the case of Hungary, students place attention to teaching excellence and distance factors (from the capital). There are well-known rankings which students check to make their decision (Nagy, 2014).

The University of Debrecen, located in a non-capital city, turns out to be the most popular option for students. In the first place, students put emphasis on the fact that ranking of universities is a key aspect when choosing a university. Initially, the decision on where to study can be difficult due to a variety of reasons, for example reasonable cost of living, location, or scholarship, etc. However, when Hungary is chosen as the host country, the students check the rankings, they compare different higher education institutions and according to the participants' information, the University of Debrecen has a good ranking position compared to other Hungarian universities. Nevertheless, we have no information about which ranking the students checked. It is important to notice that in terms of rankings there are a lot of variations. Some of them do not give an accurate validity, deriving from subjective data (Docampo, 2011). The participants expressed:

> "The ranking of Unideb was higher than in Budapest" (Egypt, Mechatronics Engineering)

> "To choose the university, I just look for the best 5 universities in Hungary, I saw Debrecen, ELTE, Szeged, and for Computer Science I found that Debrecen is better than others" (Iraq, IT)

On the other hand, not everyone guides their decisions based on internet search, others prefer to rely their decision on the stories that people close to them may have. In the book of geographies of international students, Suzanne E. Beech (2019) tells that 89% of the international students who were interviewed in four UK universities already knew a friend, a relative or an acquaintance. After rankings, people's experiences become the second layer, especially when they previously studied and had a pleasant experience. In the field of

medicine people recommend the university, to the point that a group of siblings did the same study program:

> "I think all the Hungarian universities are good to study in Hungary. My older sister and brother studied here and therefore I chose and the medical achievement of the university in medicine. Once I go back to Israel, I know that my diploma is of high quality and the students that study here in Debrecen can pass the state exam in Israel. The quality here is no less than those who study in UK or Germany" (Israel, Medicine).

> "I chose this university, because I know some students, it was recommended" (Jordan, Food safety).

The next category refers to the actual situation of experience in the classroom in connection to their learning, practices, feedback, and support.

"There should be more communication between teacher and students"

This category allows to comprehend deeper the relationship that students develop with their teachers. The teaching practice takes a significant role in enhancing university learning and teaching. It is through the teachers that students experience the academic environment and a positive relationship can facilitate students' motivation, achieve learning outcomes, and retain students (Hagenauer & Volet, 2014).The teacher's role in and outside the classroom is crucial to create a good atmosphere. Teachers can motivate, inspire, or even frustrate students. The next excerpt is an example of the teacher's support outside the classroom, observing students' work, and letting her know the feedback:

> "For example, when we were working on something in Excel, or programs to calculate an exercise. Sometimes, you are really struggling because you don't know what is really going on with your Excel and you are doing exactly the steps you should do, but you are not generating the analysis you should find, so we had a lecturer. He would allow to send that Excel and then he would check and say what he thinks is the problem or what settings you can modify and then it would be fine." (Kenya, Engineering Management).

Based on Fajcíková and Fejfarová's findings (2019), building a good teacher-students' relationship is as important as providing quality classes, the work during the class and the teacher performance is the first step to connect. Teachers' knowledge and experience should play a role when preparing a course, designing a logical structured seminar or lecture with an understandable method (Fajcíková & Fejfarová, 2019). If a class is not challenging, the students would even feel discouraged to attend as reported:

> "I think the lectures can be improved, they should be teaching not just giving information, they are just telling what you know, but not explaining properly. In the second year some of my classmates didn't attend lectures and they study by themselves." (China, Medicine)

The most principal factors influencing students' satisfaction and learning outcomes are a good course organization, clear presentation, and explanation (Alauddin & Kifle, 2014).

Once students put theory in practice in the form of an internship or a job, they can see the gaps in their knowledge:

> "Now I use a program to handle data analysis, I had the class, but it was very superficial, I would like to use it more deeply, it was very theoretical, but the way it was taught was very superficial. I think the way he presented the class; he could have been deeper not just the basics." (Brazil, Engineering Management)

In relation to the academic part, when students might feel unsupported or experiencing teacher's centered method, it can result in less attended classes, and eventually boredom and rejection towards them. However, the satisfaction of international students not only depends on receiving high-quality education (Rahimi et al., 2017), but also from having a sense of belonging in the new country, through social interaction with the local culture and people (Baumeister & Leary, 1995). Regarding this aspect, the teacher-student relationship is not strong. In the next excerpts students reveal that this connection does not happen:

> "Sometimes teachers just think in the box, and they don't want to use their own thoughts, they just follow because these are the rules. We are students from another country if they consider this besides our identity as students, most of the time. There was no teacher asking us about our worries, needs, future concerns. This is one of the biggest negative points that I find here." (Iran, Dentistry)

Teachers are one of those groups of people with whom international students have most social contact. Quality interactions with teachers lead to build better relationships (Karpouza & Emvalotis, 2019) and benefit students' learning and their adjustment (Tinto, 1993).

> "The staff of the university don't help too much outside the class, you can ask for help but they are usually quite busy." (China, Medicine)

According to the interviewees an area of improvement in the University of Debrecen is to create the opportunity for more interactions that ensure communication between students and teachers:

> "There should be more communication between teachers and students. I think the communication between teacher-student is important, it is one of the teacher's jobs, to let students feel more entertain for their subject. We are beginner and sometimes there are too much information. Sometimes we cannot handle it and we can feel more frustrated." (Taiwan, Medicine)

Varied reasons could justify the lack of communication, one could be that teachers do not live in the city where the university is located, they may have other work-related activities, or there are distinct cultural expectations in connection to the teachers' responsibility:

> "If the professor is old, he is not in with technology, but the poor communication was with the younger ages, they should be responding more, because if we ask, we should get the information that we need. I know everyone is busy, but they should make the time. Some of the teachers are from Budapest, some Miskolc, we have a lot of professors from practical medicine, medicine faculty, pharmacy, psychology." (Syria, Public Health)

The teachers-students' communication could also be affected by a topic highly mentioned by participants, which was the language barrier. This miscommunication happens with the local people and in the classroom too:

> "Honestly, I was expecting more from the teaching methods and materials, some of the professors can't speak English properly, I would give teaching 5 out of 10 actually". (Jordan, Food Safety)

In connection with the pedagogy of the teacher, there is a crucial factor that plays a key role, and it is the knowledge transmission. The common language for this is English, which can be the first language for some students, but mostly it is the second language and not just for the students, but also for the teachers. Its command becomes of key importance for teachers to pass down and students to obtain new knowledge. Although students recognize that the teachers' expertise is not questionable, it is their level of English:

> "In the university some of the teachers are good, but some of them lack English knowledge badly. Because to study a subject from a professor that barely speaks English is strange. The professors must improve their English. Specifically, because it is really needed, and I guess some official and not related to the university evaluation should be conducted." (Ukraine, Professional Pilot)

To complement the student's suggestion, Keane (2015) says that peer-review should be executed to consistently evaluate the teaching quality and the competence of teachers. In fact, if the university wants to increase their teaching quality, they will implement different tools to overcome the deficiencies spotted.

Another important academic aspect is the feedback provided by teachers. The feature of the feedback is that it comes not only with grades, but also comments and tips on how to improve weak areas. According to Hattie and Timperley (2007), feedback is information provided by an agent regarding aspects of one's performance or understanding. whether teachers give good or poor feedback, it contributes on students' motivation:

> "Some teachers would say to you it is good, you can modify this. Other teachers would tell you how to modify it, and others would just say good work, and you would not know what is good or not, because at the end of the day they would just give you a signature. Then this generates your attitude towards the subject, you are motivated to do more if the teachers are telling you try this or try that. But if you get an ok and a signature, you don't put more effort. It depends on the type of subject you are doing. If it is lots of calculation the feedback will be check this formula, use this different approach. If it is something like doing an analysis about a company, there is not right or wrong answer, but they can go an extra mile to show how to explore a different angle or he can just say ok" (Kenya, Engineering Management).

> "The only feedback we get is just grades, not everyone gives explanations. I guess because they don't have much time. For me I think I should learn by my previous mistakes, so it is good if they say what we did wrong" (Egypt, Mechatronics Engineering)

Wisniewski et al. (2020) state that specific written comments are more effective than providing grades and, forms of feedback with a lack of information value have low effects on student achievement.

> "Teachers don't give personal feedback, just grade. We don't have contact with professor. They can send feedback by email, because they say very clear, don't call them." (China, Medicine)

The previous excerpt is a call to create reflection and propose a change in the teacher's feedback methods. Generating a more elaborated and personal way to provide recommendations and assessment could benefit both teachers and students.

An additional aspect to the communication with teachers based on the interviews is a lack of support providing information that concerns students after graduation. Most international students would like to remain in Europe, and they wish that the teacher could guide students towards that goal:

> "Maybe I have high expectations about professors. Most students want to get working experience here, but we didn't get any information on how to work here, they just ask do you want to stay or go back. And when we say stay here, they finish the conversation, they don't say anything about where we can go, how to apply and where. Not just in the faculty, but I think in life as a teacher they have the responsibility to give information to guide in the future to know how to do after graduation. (Iran, Dentistry)

The following category refers to the support that students find in themselves and through their classmates.

"I do everything by myself or with my friends"

The role of the student is to learn from their instructors and be an active member of the class, cooperate with classmates and help each other. Besides building relationships with the teachers, students also build them with their peers. Peer learning refers to the mutual learning interaction with each other during informal or formal learning situations (Boud, 2014):

> "We experienced group work in some classes, and this became a habit, we studied as a group and we build a good relationship despite the nationality, everyone knows more about one topic, others about other and we supported each other." (Syria, Public Health)

In today's form of education students prefer to be the center of the class, this authoritative figure of the teacher who knows everything has changed and by giving students a more leading role, their motivation increases:

> "In medicine most of the learning is individual, but in some subjects, we must do some presentations and here is where you learn from your classmates. If we do presentation in each subject we could improve in knowledge and presentation skills, it is important does not matter what you study." (Israel, Medicine).

There are three figures of support within the learning process, one is provided by the teacher, the stronger the better. The second is a peer support, which plays a significant role in peer learning, during it a more advanced student can clarify and monitor a classmate's learning process (Panadero et al., 2019). The third is self-support finding answers by themselves:

> "When I have questions, I can ask my teacher to solve it, but most of time I do everything by myself or with my friends, sometimes we study together for the exams. It is a big support for us." (Taiwan, Medicine).

The last category refers to the subjects and requirements students must be fulfilled during their study period.

"The curriculum of the university must change"

Students have direct experience with the organization of their faculty, and the curriculum. There are fields of knowledge that may require practical activities. For example, laboratory practices, field trip visits, internships, or field work. From the perspective of students, practice should exceed theory and it should be reflected in an updated curriculum adjusted to the current needs of the job market:

> "Theoretical part is enough, but I think they should include practical part in the academy program" (Vietnam, Public Health).

> "I criticize the education system. I discuss about the education in pharmacy and health care, the job market is very competitive, I advise to change the curriculum of the faculty. The curriculum of the university at least in pharmacy must change." (Nigeria, Pharmacy)

Curriculum usually refers to the content, objectives, and organization of learning (Walker, 2003). Students explore the university websites and check the curriculum of their program of study to have a vision of their academic path. When this information does not match with the reality, the responsibility is from the administration which should comply with the study program students find:

> "I think my academic staff should be prepared about the timetable and they should be certain or sure, the timetable change over time, it is not stable. Sometimes they do not inform us, I think this is about the administration. This semester at the beginning (week 3) my professor has told they changed and after that, they changed again, this has been for two subjects. Fortunately, the professor told us directly but if we wait for administrative, we wouldn't get that information." (Vietnam, Public Health).

> "Also, several compulsory subjects are missing, we don't know in the future what will happen to us, there are doubts and uncertainty. We need more information. I don't know, we are missing many compulsory subjects, they said we will study next semester, and then never happens. I think I would not recommend my faculty. Other faculties, but my faculty no." (Japan, Public Health)

> "Regarding the pharmaflight (outsourced department of the university for the professional pilot program) and the university. There should be some legal paperwork to establish the responsibilities of university and pharmaflight, and to really follow

these guidelines. Because, for example, what is written in our curriculum is completely different from what happens in real life, so the programs are different, the number of hours is different, the schedules are different, so in the first year, we were basically told to forget about curriculum and we were going to do something else, which is strange. In pharmaflight they told us that in the curriculum we have the subjects which are provided by pharmaflight, but the curriculum is from the university, but in real life the programs, and the requirements are not in the curriculum. Because pharmaflight say we are a different company, we organize a little bit different, and the subjects are not in this order and the grading will be also different and so on." (Ukraine, Professional Pilot)

Two key areas need improvement. First, to make the master programs more specialized in certain areas and second, to increase the research development considering that the university is a research-based institution:

"There should be emphasis in one thing and not just a lot of things, the idea is to be expert in one thing, not so wide information. To be successful, we should look at the market, and then improve academic knowledge, otherwise we cannot do a good life, if we do not emphasize in one thing." (Syria, Public Health)

"There should be more precise information about how to conduct research. In the master's degree there should be at least two subjects about research, even many PhD students don't know how to do it." (India, IT)

The previous categories revealed that despite the less positive experiences of students, there are aspects that create a good atmosphere for learning. The multicultural friendships, the academic support from most of the teachers, and the academic challenges, shape resilient students in different fields of study in a research-based university that every year rises in the rankings.

Conclusion

The academic integration of the international students in Debrecen is constituted by four categories. The participants revealed that four main aspects take place and are fundamental during the experience of their study abroad period. Their experience can be positive or negative, however resilience predominates in the areas that according to the participants need improvement.

To answer the question of this research: What do international students' experiences reveal about their academic integration? We can conclude that from the beginning there are elevated expectations since students relied on their search in the rankings to choose the university. As soon as they start to face the actual Hungarian education system of the university, they can observe that the administration and the curriculum, in some cases, are different from what they thought.

In terms of the classroom performance, they noticed that teachers have the knowledge of the subject, but language barrier and a distance relationship with teachers create a gap between what they should learn and what they learn. Finally, the peer learning relations and a sense of togetherness with their classmates is developed because of the connection in the classroom.

References

Alauddin, M. & Kifle, T. (2014) "Does the student evaluation of teaching instrument really measure instructors' teaching effectiveness? An econometric analysis of students' perceptions in economics courses", Economic Analysis and Policy, Vol. 44, No. 2, pp. 156-168. https://doi.org/10.1016/j.eap.2014.05.009

Baker, R. W., & Siryk, B. (1999). SACQ Student Adaptation to College Questionnaire (2nd edition ed.). Los Angeles: Western Psychological Services.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529.

Beech, S. (2019). *The Geographies of International Student Mobility. Spaces, places, and Decision- Making.* Palgrave macmillan.

Boud, D. (2014). Introduction: making the move to peer learning. In D. Boud, R. Cohen, & J. Simpson (Eds.), *Peer Learning in Higher Education: Learning from and With Each Other* (pp. 1–20). New York: Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Braun, V. & Clarke, V. (2012) Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds), *APA handbook of research methods in psychology, Vol. 2: Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57-71). Washington, DC: American Psychological Association.

Docampo, D. (2011). On using the Shanghai ranking to assess the research performance of university systems. Vol.86. Issue 1. Pag 7-92. https://doi.org/10.1007/s11192-010-0280-y

Fajčíková, A. & Fejfarová, M. (2019). "Evaluation of the Quality of Teaching from the Perspective of University Students", Journal on Efficiency and Responsibility in Education and Science, vol. 12, no. 2, pp. 34-40. http://dx.doi.org/10.7160/eriesj.2019.120201

Flick, U. (2009). An introduction to qualitative research, 4th ed. Retrieved from https://academic.microsoft.com/paper/2998008903

Hagenauer, G., & Volet, S. E. (2014). Teacher–student relationship at university: An important yet under-researched field. *Oxford Review of Education, 40*(3), 370–388. https://doi.org/10.1080/03054985.2014.921613

Hattie, J., & Timperley, H. (2007). The power of feedback. *Rev. Educ. Res.* 77, 81–112. doi: 10.3102/003465430298487

Keane, M. (2015) 'Responsibility for Learning: An Inclusive Approach to Learning and Teaching Evaluation in Higher Education', Procedia - Social and Behavioral Sciences, Vol. 167, pp. 28-37. http://dx.doi.org/10.1016/j.sbspro.2014.12.638

Lichtman, M. (2013). Qualitative Research in Education: A User's Guide (3rd edition). Sage publications Ltda. ISBN: ISBN-978-0-7619-2935-2

Nagy, A. (2014 July 3rd). Higher education rankings, student preferences. conference held at University of Pannonia, Vezprem, Hungary. https://doi.org/10.1556/imas.3.2011.2.9

Panadero, E., Broadbent, J., Boud, D., & Lodge, J. M. (2019). Using formative assessment to influence self- and co-regulated learning: the role of evaluative judgement. *European Journal of Psychology of Education, 34*, 535–557.

Plummer, K. (2005). Documents of life 2: an invitation to critical humanism. Sage Publications, Tyne & Wear

Rahimi, M., Halse, C., & Blackmore, J. (2017). Transnational secondary schooling and im/mobile international students. *The Australian Educational Researcher, 44,* 299–321.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research. 45(1). 89-125.

University website. (2022). A Debreceni Egyetem külföldi hallgatóinak 2021. október 15-i létszámadatai országonként. Retrieved from https://unideb.hu/hallgatoi-statisztikak

Walker, D. (2003). *Fundamentals of curriculum*. Mahwah: Lawrence Erlbaum.

Wisniewski, B. Zierer, K., & Hattie, J. (2020). The Power of Feedback Revisited: A Meta-Analysis of Educational Feedback Research. *Front. Psychol.* 10 :3087. Doi: 10.3389/fpsyg.2019.03087

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University Students' Perceptions of Using a Communication Platform for English Speaking Courses

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Abstract

Attributable to the fast pace of globalization, demand for effective English speaking skills has been growing rapidly. It is clear that a greater enhancement of the communication skills of university students is a critical mission of English educators. At the current time, an array of communication platforms is being used across different education levels. The purpose of the study was to explore university students' perceptions of the pros and cons of using a chat-based communication platform for English speaking courses. The target population for this study was students at a selected university in northern Taiwan. This study employed a qualitative approach. Specifically, interviews were conducted to gather qualitative data to gain insight into the perceptions of the participating students. Results of the study revealed that students are generally satisfied with the technology for educational purposes due to its accessibility and practicality. However, students pointed out several limitations that prevented the software from being an ideal substitute for actual classroom meetings, especially for speaking courses. It is concluded that despite the usefulness of chat-based communication platforms for online classes, students in speaking courses have a noticeable preference for direct interactions with their classmates and instructor in person. Recommendations are made for instructors of speaking courses to conduct an optimal online learning environment that best resembles the characteristics of actual face-to-face interactions.

Keywords: English Speaking, EFL (English as a Foreign Language) Teaching, Online Teaching, Communication Platform, Course Design

Introduction

Attributable to the fast pace of globalization, demand for effective English speaking skills has been growing rapidly. It is clear that a greater enhancement of the communication skills of university students is a critical mission of English educators. Likewise, a greater understanding of the practical needs of students in the modern era is a vital task for English teachers (Philominraj, Bertilla, Ramírez-Muñoz, & Fuentealba, 2018). Simply achieving adequate scores on English proficiency exams is no longer sufficient for students in the 21st century. There is an important shift from general English to practical English. Of the four facets of English skills, namely reading, listening, writing, and speaking, instructions in speaking have not been sufficiently provided to Taiwanese university students. It could even be said that speaking is easily one of the most lacking aspects of Taiwanese university students' English competency. In reality, however, it is essential for students to continuously acquire and improve English speaking skills to carry out successful international communication (Nickerson, Gerritsen, & Meurs, 2005).

The Ministry of Education in Taiwan has been actively promoting the use of digital technology on university campuses. Its most recently released objectives clearly stated the importance of providing advanced digital learning environments and further implementing digital learning (Ministry of Education, 2022). In the same press release, it was stated that the expansion of English language proficiency testing would be implemented. In spite of this, simply obtaining adequate scores on English proficiency tests is no longer sufficient for students in the 21st century. An important shift from general English to practical English is taking place. Of the four facets of English skills, namely listening, reading, writing, and speaking, instructions in speaking have not been sufficiently provided to Taiwanese university students. In short, speaking skills is easily one of the most lacking aspects of Taiwanese university students' English competency. This presents a unique challenge to English educators in Taiwan to teach speaking courses online.

The digital era paved the way for students to instantly access any information. Students' learning preferences have changed with the digital revolution (Noskova, Pavlova, & Yakovleva, 2021). The online environment is an enormously vast learning platform where information is readily available virtually anywhere on the Internet. As such, knowledge and skills taught at the university level must be able to reflect real-world applications to accommodate students' practical learning needs. Foreign language teaching in higher education must include interpersonal problem-solving abilities real-world communication skills that can be applied to the global workforce.

A study that examined connectivist theory in English language learning showed that being involved in dialogue and collaborative learning increases connectivist knowledge, negotiation, and reflection (Sozudogru, Altinay, Dagli, Altinay, & Altinay, 2019). It was also stated that online communication tools can be used as an effective supplementary material for learning. That study concluded that a new way of language learning becomes essential for learning with online social networking tools in higher education.

In a recent study, Ilin (2022) stated that educational technology, now a staple of contemporary classrooms, offers many benefits, including access to knowledge, mobility, multiple means of engagement, accessibility, distance learning, and the ability to connect in unprecedented ways. However, it was pointed out that few studies explore the preferences of

the learners. It was further stated that without assessment of the user preference, the benefits of learning through technology are often lessened.

In an English as foreign language (EFL) context, Washburn (2021) measured learner course satisfaction with digital composing modes and examined online factors of digital multimodal composing preference in an online EFL communication course. Quantitative results indicated Korean students expressed aversion to video recordings and video responses as well as moderate concern for video conferencing. It was further stated that text-based digital discussions can present meaningful challenges to learners to apply new language skills all without the affective challenges of face-to-face classes or synchronous video conferencing.

Sung and Yeh (2012) conducted an interview study that investigated Taiwanese university students' perception of incorporating language learning technology into English learning. The study found that students showed positive attitudes toward technology integration in foreign language learning due to its convenience and practicality. However, students pointed out an obvious need to improve the technology's functionality to develop speaking skills. Another qualitative study that used semi-structured interviews, also found that learners of English for Specific Purposes showed held positive opinions on the incorporation of CALL (Olejarczuk, 2018).

Considering the inevitable trend of globalized education, effective English speaking skills are becoming increasingly more crucial for Taiwanese university students. Ensuring the effectiveness of English instructions provided to students to promote adequate English speaking is not just beneficial in terms of academics, but also raises students' competitiveness in the global job market. This is especially important during a difficult time when classes can shift from face-to-face to online and back again. The purpose of the study was to explore university students' perceptions of the pros and cons of using a chat-based communication platform for English speaking courses.

Methods

This section presents the methodology utilized in the study. The selection of the target population and participants are described in the following paragraphs. Data collection and data analysis procedures are also described in this section.

The target population of this study was the students at a selected university in the northern part of Taiwan. Three English speaking classes with a total of 62 students took part in this study during the Spring semester of 2022. The 62 students were from 19 different academic programs. Fourteen groups of three to five students were interviewed to collect data from the students.

A qualitative approach was employed to conduct the study. In qualitative research, the researcher serves as the instrument for data collection (Creswell, 1994). The instruments used included interview questions about students' perceptions on online learning and the online platform's effectiveness in English speaking skill development. Specifically, the interviews aimed to acquire valuable information about students' perceptions of using a communication platform for English speaking courses during the two months that their English speaking classes had to be carried out online.

A total of six interview questions were designed by the researcher. The questions concerned the students' perspective of online classes, problems encountered using the online communication platform, and the perceived effectiveness of the online communication platform in speaking classes. As to assure the quality of the interview questions, two EFL researchers with experience in conducting qualitative studies were asked to assess the validity and reliability of the contents. Minor changes in the wording were made based on the feedback by the researchers. The interviews made use of the six prearranged questions.

For perspective, the coronavirus pandemic worsened at an incredible rate in Taiwan during the second quarter of 2022. Consequently, the great majority of classes in high education shifted to emergency remote learning as of April 2022. The interviews were conducted at the end of May 2022, which allowed the students to have half of their class meetings in the classroom and the other half online during the semester. Each group interview, completed entirely in English, lasted about 25 to 30 minutes. In the case that the participating students' responses were not clear enough, additional questions were asked to elicit further information.

Results

Group interviews were conducted to collect data from the participants. The following section presents the summaries of the interview responses.

Question 1: What is your perspective on the online communication platform used during the second half of the semester? Please describe your experiences during the eight weeks of online classes using the platform.

In general, students considered the online communication platform to be convenient, user-friendly, and versatile. Students indicated that in a time when PowerPoint lectures are common, their learning habits during online lessons have remained largely unchanged. As long as they paid continuous attention to the teacher's instructions, their learning outcome would not differ greatly.

Depending on different instructors' familiarity with the online communication platform, some instructors would change their teaching methods when classes were conducted online. The unwanted changes resulted in fewer interactions with the instructors for certain classes.

Students pointed out that the record function allowed them to review the lessons. This is not possible when classes are conducted inside the classroom. Other students also made use of screenshots when needed.

Several students indicated that the convenience of attending these online lectures virtually anywhere was favorable. However, many students revealed that maintaining a high level of focus during online classes was not an easy task. There were simply too many distractions around them.

Question 2: What problems or difficulties did you encounter using the online communication platform during online classes? Please describe the problems you faced and what bothered you most.

Various technical errors associated with online learning occurred that ended up hindering students' learning process. There were many instances when the instructors were unable to commence a meeting due to connection problems. Likewise, students encountered problems signing into the platform or joining the class meetings due to similar reasons. One particular student never successfully joined the class meeting by clicking on the join button provided by the instructor. A separate link always had to be sent to that particular student for her to join.

There were times when the Internet connection speed came to a halt for several students. Malfunctioning microphones and webcams also caused many delays during class time. Students' microphone volume and quality vary greatly, which affected the communication process. Lag due to slow network speed also noticeably decreased the quality of communication. Students had to resort to typing their responses on the message board when such technical problems occurred. This was deemed very unproductive, especially for a speaking class.

A small number of students pointed out that older computers were not able to perform adequately for online classes. As such, students had to make use of their smartphones instead. However, the much smaller screen on a smartphone made it rather difficult to see the lecture notes. During presentation sessions toward the end of the semester, a small number of students reported that they were not able to share their screens. This further complicated the issue as students were not able to show the visual aid they prepared for the presentation. Similarly, the researcher also encountered this problem and was forced to switch to the use of another tablet to continue the lecture.

Question 3: After eight weeks of using the online communication platform, do you consider it an ideal tool for an English speaking class? Why or why not?

Despite the established usefulness of the communication platform for online class meetings as a whole, especially during the pandemic, most students actually do not consider it an ideal tool for an English speaking class.

Several students felt that the online environment removed several important characteristics of interpersonal communication as well as public speaking. They preferred their training, in terms of public speaking, to be more realistic and rigorous. In addition, they also expected their training to help them overcome the fear of speaking in front of a crowd. In contrast, a small number of students revealed that the lack of face-of-face interaction reduced their feeling of nervousness and anxiety level. This unexpected benefit provided them with more courage to speak up. The perceptually more relaxing environment prompted them to speak up more. Some even went as far as describing telecommuting and speaking in an online environment are the ways of the future. They believed that increasingly more human communication will be carried out online in the digital age.

The message board allowed certain students to type their responses instead of providing verbal responses. Unimportant messages and even emoticons would pop up at unnecessary times, resulting in a less formal learning atmosphere. Problems associated with the message board would not be present during class meetings in a physical classroom.

Several students pointed out that non-verbal communication is a significant part of human interactions. However, this critical aspect is sometimes missing in online classes. Some students even described this as counterintuitive for a speaking course.

Students also indicated that any potential problem associated with Internet connection speed or equipment malfunction would be magnified for a speaking class. The decreased communication quality due to technical issues would eventually affect the learning quality of speaking classes online. This makes the online communication platform much less favorable for a speaking class.

Question 4: Do you think using the online communication platform can effectively enhance your English-speaking skills? Why or why not?

Several students cautiously indicated that the online communication platform can enhance students' English conversation skills. However, it does not provide the same realistic environment for students to enhance their public speaking skills.

Many students believe that speaking into a microphone is not the same as speaking to another individual face-to-face. They indicated that body language and emotional expressions cannot be accurately conveyed. Furthermore, the important use of appropriate eye contact cannot be practiced in an online environment.

Some students believe that in an online environment, students with higher levels of motivation will continue to engage themselves in in-class activities. On the other hand, less motivated students will disengage themselves even more from the activities. More dominant students, often found in speaking classes, could speak in a monologue while other students further shun away from speaking. A student even described this undesirable situation as a vicious cycle.

A group discussion sometimes requires a leader to take the initiative to begin the activity. Students revealed that silence among a group is usually apparent and somewhat uncomfortable inside a classroom. However, students were able to tolerate long periods of silence when activities were conducted online, especially without the use of webcams. This—compounded with the lack of an active leader—created a counterproductive situation for a speaking class.

Another negative side effect identified by the students was the possibility of "cheating" during online classes. Pages of notes and other resources could be available to students when they had to carry out presentations online. Students could read from a script, which would not normally be allowed when presenting in front of an audience in the classroom.

Question 5: In what ways could the online communication platform be utilized as an effective platform for an English-speaking class?

In line with the aforementioned notion that certain students were less motivated to actively participate in group activities, many students felt that different discussion groups should be formed on a regular basis similar to physical class meetings. However, they understood the extra time that instructors had to spend to reassign different groups using the online communication platform.

Students pointed out the importance of making the use of webcams a class requirement. Some felt this would allow online communication to better match in-person experiences. Moreover, this would allow the instructor to better monitor students' learning online.

On the technical side, students suggested that all teachers and students be better trained and better equipped to become fully competent in the use of the online communication platform, particularly during a time that classes would be expected to stay online extensively. This would ensure instructional quality and learning efficiency during class meetings when the online communication platform is used. Some students believe that if all technical errors could be prevented, their learning in a virtual environment would just be as effective.

Overall, students believe that the online communication platform readily consisted of essential functions and features for successful online learning. However, a virtual environment could not promote effective in-person interactions for a speaking class. In short, improvements should be made in terms of technology proficiency and student participation.

Question 6: Any additional comments you would like to share regarding your experience with the online communication platform this semester?

At the selected university, attendance was taken through a QR code. It was revealed students could possibly scan the QR code and not really attend class meetings online. It was further revealed that the QR code could be sent to students that were not even present on the online communication platform. Accordingly, the webcam requirement was once again brought up by the students.

All in all, students pointed out that in a turbulent time, both teachers and students should be ready to carry out class meetings physically in the classroom or online. It is the responsibility of both parties to become proficient in the use of the online communication platform. Teachers and students alike should embrace the technology with a positive mindset to maximize their teaching and learning. These two aspects are especially critical for a speaking class to be conducted effectively.

Discussion

Study results showed that certain students had less speaking anxiety when carrying out communication online using the communication platform. An experimental study conducted by Punar and Uzun (2019) also showed that the use of online communication platform had a positive effect on foreign language learners' English speaking anxiety because it decreased the learners' anxiety levels. It was suggested that online communication opportunities should be employed in educational settings since anxiety levels drop significantly when compared to face-to-face interactions in the classrooms. Therefore, this advantageous aspect should be carefully utilized, especially for students with a lower level of confidence levels. On a different note, it was stated that online speaking assessment will not bring serious concerns related to cheating as suggested by participating students in the present study. The notion is that the process will require the instructor as well as the students to speak to each other synchronously. This once more reinforces the importance of using webcams.

In the present study, students showed mixed feelings about the use of the online communication platform for educational purposes. They found the current technology and existing online communication platforms sufficient for classes to be carried out online without sacrificing too much instructional quality. They also found the online communication platform to be readily available for learning in a virtual environment. This is in line with the statement that social media tools have been playing a crucial role in the renovation of conventional teaching and learning practices around the world (Vivakaran & Neelamalar,

2018). It was further stated that though primarily developed for online social communication, these platforms were found to possess ideal features that can be used for teaching purposes to initiate active learning among students.

In spite of the abovementioned positive aspect, students of the present study generally expressed agreement that the negatives outweigh the positives when the technology is used for English speaking courses. They stressed the notion that English speaking classes should be conducted in a face-to-face learning environment whenever possible as to effectively enhance students' communicative and public speaking skills. This finding is different compared to a study that involved undergraduates studying English as a Foreign Language at a university in Japan, and Japanese as a Foreign Language undergraduates from a university in Australia (Sampson & Yoshida, 2021). The cross-national longitudinal study in which participating students engaged in text chats instead of voice chats, showed that mentions of positive amounted to more than double those of negative emotions. The positive result could be attributed to participating students did not actually have to speak during those sessions. Another possible explanation is that chat sessions involving international participants were more appealing as suggested by the students in the present study. It has been stated that with the construction of international online platforms, authentic intercultural communication conditions could be provided for university students to improve their English skills as well as intercultural communication competence (Liu & Wang, 2020).

As several students mentioned, non-verbal cues play an essential role in how people convey meaning and information to each other. Nonetheless, Ahmed (2018) argued that this fundamental aspect is frequently missing in online classes. This is particularly unconstructive for a speaking class. Sharma and Vyas (2022) suggested that certain training could be provided to teachers to perceive non-verbal cues in online classes. This could lead to an improved ability of the teachers to perceive students' non-verbal cues during online classes in a better manner. Subsequently, communication between the instructor and students could be enhanced even in a virtual learning environment. Another study also asserted that instructors can improve the effectiveness of online learning environments via non-verbal immediacy behaviors (Dixson, Greenwell, Rogers-Stacy, Weister, & Lauer, 2017).

A similar study was conducted to investigate Taiwanese university students' perceptions and feedback regarding an online English learning platform. Results of that study revealed that the platform, although specifically developed for interactive English learning, still lacked functionality for users to improve their speaking skills (Sung, 2019). The lack of sufficient features for interactive speaking practice was identified as a major weakness. The online communication platform used for this study was not specifically developed for educational purposes. However, the makeup of the platform allows continuous communication and speaking practice opportunities. Still, students did not find the virtual environment to be realistic or ideal for English speaking courses. Students carefully pointed out that the online communication platform itself is versatile for teaching and learning a foreign language. However, instructors' classroom management skills and students' classroom behaviors in a virtual setting greatly influence the platform's effectiveness for English speaking courses. Lastly, students' attitudes considerably influence their ability and willingness to listen and speak in an English speaking course online, which in turn affects their learning efficiency.

Conclusions

Results of the study revealed that students are generally satisfied with the technology for educational purposes due to its accessibility and practicality. The online communication platform is deemed effective for teacher-centered, lecture-based courses. However, students pointed out several limitations that prevented the software from being an ideal substitute for actual classroom meetings, especially for supposedly more student-centered English speaking courses. In an effort to improve the teaching quality of English speaking instruction and enhance the students' international communication competence, instructors today are recommended to fully grasp and utilize the various functions of the online communication platform.

It is concluded that despite the usefulness of chat-based communication platforms for online classes, students in speaking courses have a noticeable preference for direct interactions with their classmates and instructor in person. Instructors of English speaking courses need to adapt to the changing times with the aim of conducting an optimal online learning environment that best resembles the characteristics of actual face-to-face interactions. Subsequent studies should focus on exploring strategies for promoting English instructors' pedagogical and technological skills in teaching speaking classes both physically in a classroom and digitally through an online communication platform.

References

Ahmed, R. (2018). Effects of online education on encoding and decoding process of students and teachers. *Proceedings of the 2018 International Conference on e-Learning, Madrid, Spain*, 42-48.

Creswell, J. W. (1994). *Research design*: *Qualitative and quantitative approaches.* Thousand Oak, CA: Sage.

Dixson, M. D., Greenwell, M. R., Rogers-Stacy, C., Weister, T., & Lauer, S. (2017). Nonverbal immediacy behaviors and online student engagement: Bringing past instructional research into the present virtual classroom. *Communication Education, 66*(1), 37-53.

Ilin, V. (2022). The role of user preferences in engagement with online learning. *E-Learning and Digital Media, 19*(2), 189-208.

Liu, R., & Wang, Y. (2020). ICC cultivation in a multiform course mode. In E. Hagley & Y. Wang (Eds), *Virtual exchange in the Asia-Pacific: research and practice* (pp. 77-102). Research-publishing.net. https://doi.org/10.14705/ rpnet.2020.47.1147

Ministry of Education (2015). Ministry of Education Objectives for 2023 (January-December). Retrieved July 02, 2022, from https://english.moe.gov.tw/cp-9-32902-b95f1-1.html

Nickerson, C., Gerritsen, M., & Meurs, F. V. (2005). Raising student awareness of the use of English for specific business purposes in the European context: A staff-student project. *English for Specific Purposes, 24*(3), 333-345.

Noskova, T., Pavlova, T., & Yakovleva, O. (2021). A study of students' preferences in the information resources of the digital learning environment. *Journal on Efficiency and Responsibility in Education and Science, 14*(1), 53-65.

Olejarczuk, E. (2018). ESP learners' beliefs about CALL-A qualitative perspective. *Language Learning in Higher Education, 8*(1), 157-172.

Philominraj, A., Bertilla, M., Ramírez-Muñoz, B., & Fuentealba, A. (2018). The interconnectedness between experienceand intelligence to English language teaching. *English Language Teaching, 11*(5), 68-73.

Punar. N., & Uzun, L. (2019). The effect of the Skype[TM] conference call on English speaking anxiety. *International Online Journal of Education and Teaching, 6*(2), 393-403.

Sampson, R., & Yoshida, R. (2021). L2 Feelings through Interaction in a Japanese-English Online Chat Exchange. *Innovation in Language Learning and Teaching, 15(*2), 131-142.

Sharma, S., & Vyas, P. (2022). Enhancing non-verbal communication in online classes: A conceptual framework. *Journal of Education for Teaching: International Research and Pedagogy*, *48*(1), 135-137.

Sozudogru, O., Altinay, M., Dagli, G., Altinay, Z., & Altinay, F. (2019). Examination of connectivist theory in English language learning: The role of online social networking tool. *International Journal of Information and Learning Technology, 36*(4), 354-363.

Sung, D. (2019). University students' perceptions toward an online interactive English learning platform. *Proceedings of the 5th International Conference on Education, Kuala Lumpur, Malaysia*, 21-30.

Sung, D., & Yeh, C. Y. (2012). Perceptions of using online technology in language education: An interview study with Taiwanese university students. *Procedia - Social and Behavioral Sciences, 51*, 405-410.

Vivakaran, M. V., & Neelamalar, M. (2018). Utilization of social media platforms for educational purposes among the faculty of higher education with special reference to Tamil Nadu. *Higher Education for the Future, 35*(1), 4-19.

Washburn, D. F. (2021). Korean EFL Learner Preference for Text-Based Digital Composing during Emergency Remote Learning. *English Teaching, 76*(2), 131-152.

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Exploring a Standardized Training Framework That Provides Individualized Student Experiences

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Abstract

Since modern workplaces and universities are becoming increasingly diverse, there is mounting pressure for universities to provide intercultural competency training for students. Various approaches for teaching intercultural competencies exist and are reliant on intercultural experts. Not all universities can provide intercultural experts to deliver training internally. Meanwhile, outsourcing to external trainings may not adequately address context-specific theory or practice. To address this need, the UNIT FOUR framework was developed to provide a repeatable, standardized one-day workshop teaching intercultural competencies for university students. The modular framework's combination of theory and practical components were designed to allow any qualified instructor to teach intercultural competencies and provide a regular positive educational experience while maintaining sufficient flexibility for individualized cultural experiences for students. The UNIT FOUR framework was intended to be taught virtually to accommodate modern teaching during the ongoing COVID-19 pandemic and beyond. This framework was implemented at one of the most internationally diverse campuses in Germany to explore instructors' and students' experiences. Students reacted positively to the UNIT FOUR framework in terms of learning new information and having an individualized cultural experience. Interculturally-trained and non-interculturally trained instructors reported varied experiences with this novel training format while students reported positive experiences with both types of instructors. This early exploration into a standardized training format hints at an effective and repeatable format to support instructors in a virtual teaching environment.

Keywords: Standardization, Standardized Training, Intercultural Training, Training Framework, International Students, Higher Education

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Introduction

In the pace of today's world, it can feel overwhelming for one to keep track of the constant shifts in technological trends, societal shifts, and even daily interactions with other people. The internet's push towards digitalization has connected people around the world in ways that permeate nearly all aspects of daily life. Whereas previously it may have only been necessary to interact with others in one's immediate physical environment, today it is becoming increasingly expected to be able to interact with individuals from other parts of the world. This is akin to the idea of a global tribe (Alasuutari, 2015) where people are exceptionally more interconnected. Although people are not connected in a literal tribal sense, it is becoming more common for individuals to interact with others with varying cultural backgrounds in their personal and professional lives.

In the professional realm, enterprises and organizations are embracing the globalized digital world. Organizations, particularly multinational corporations (MNCs), are recognizing the challenges of adapting to different cultures as their target markets expand. These challenges have spurred demand for intercultural competencies and qualified professionals to be able to adapt to changes in cultural environments as a means towards effectively developing or maintaining business relationships. In Brazil for example, MNCs have developed organizational-wide strategies for management to adapt to foreign cultures. These MNCs' recognize *estrangeirismo*, or the Brazilian equivalent of an ethnorelativist perspective. *Estrangeirismo* is the focus of managerial intercultural competency training. Although various teaching styles such as the single- or double-loop learning methods have been implemented, these MNCs train their managers to identify, address, and adapt to *estrangeirismo* situations (Bartel-Radic, 2013). Similarly, international companies in Australia must adapt to differences in cultural expectations and practice with their partners in China. Uniquely, managers in the Australian companies must learn intercultural competencies as well as how to interact with *guanxi*. *Guanxi*, in this context, refer to individuals whose primarily responsibility is to maintain relationships between insider (Chinese) interests and outsider (foreign) interests (Gao et al., 2014). Although communication has never been easier between cultures through digitalization, professional interaction requires an emerging set of skills to facilitate meaningful interactions.

Companies and organizations whose primary activities or target audience are in different cultures see the need for intercultural competencies, but how can they determine the most appropriate set of skills or knowledge? A wide range of knowledge in the form of theories or frameworks can fit into the category of intercultural competencies ranging from well-known theories such as Hofstede's cultural dimensions (1984) to more niche approaches such as Chan & Erby's theory of applied intersexuality for intercultural queer couples (2018). The knowledge of the former can be thought of as information applicable to a larger societal or cultural context while the latter is more applicable to smaller communities or subgroups within the larger culture. Going beyond sources of knowledge, intercultural competencies also suggest a set of practical skills (Paras and Mitchell, 2017). These skillsets are designed to facilitate an individual's ability to identify, understand, and inform themselves of a culture through the interactions between behaviors and values (Morris et al., 2014). Such skillsets including emotional intelligence (Boyatzis et al., 1999) and cultural intelligence (Thomas et al., 2015) are a few of many approaches that have sought to empower individuals to adopt a practical ethnorelativist perspective that can facilitate interactions between cultural contexts. Rather than attempting to identify which of the numerous bodies of knowledge or skillsets is

the most effective or practical, this body of work instead focuses on the role that each of these plays. These are, namely, theoretical knowledge and practical skills.

The theory and practical skills incorporated into intercultural training can take many forms in practice. Many of the practical skills incorporated into intercultural training are done on a national level or using national level training (Ang and Massingham, 2007). These may often look at stereotypes and very crude generalizations of certain cultures. Intercultural trainings have more recently shifted towards examining individual culture, identity, and the concept of belonging. This relativistic approach can be better understood through the concept of fluidity of culture. In the context of this publication, fluidity of culture is defined as culture is something that is constantly in motion or flowing. This is analogous to a flowing body of water, such as a river or a creek. In order to understand the whole thing, one should start with smaller, individual components of the water. Much like taking a cup and extracting a sample out of a river, examining an entire culture is similar in that one must look at the small aspects of the culture in order to try to get a picture of the whole ecosystem. Teaching fluidity of culture is more specific and individualized than a national level approach. National level cultural training is less time-consuming, but also more generalized as opposed to personalized training through the fluidity of culture approach. Cultural training providers and organizations must balance cost, content, and time investment by taking into account these different possibilities to determine the optimal level of individual cultural experience.

Mahadevan specifies an intercultural training triangle that is formed between those that order the training (typically human resources), those that facilitate the training, and those that participate in the training (2021, p. 4). All of these groups perceive the intercultural process differently and have different levels of knowledge about the intercultural training process. They therefore argue there needs to be more focus on the actual training environment and how content is transferred, rather than the simplicity or complexity of the content. This is further indicated by a general lack of studies in this area (Mahadevan, 2021).

Many forms of intercultural trainings are available and organizations must balance their institutional needs with the training content. This interplay necessitates effective communication between the organization and the intercultural training provider since organizations, training providers, and the numerous culture environments are in a state of dynamic change. Organizations and their cultural environment are constantly changing and the cultural research & practice likewise changes in parallel. This relationship can be thought of as a dynamic system that is constantly seeking to achieve equilibrium. Equilibrium in this case is represented by organizations that are properly prepared by well-informed cultural training providers to operate in the various cultural environments where their staff, target audience, and primary activities take place. To this end, many organizations implement a form of quality control. The form of quality control is industry and context-specific, but the goal is to measure and evaluate the organization's performance for the purposes of improvement. These types of metrics inform standards that are a part of most, if not all industries. Industry standards represent minimum quality goals that private enterprises must meet in order to enter an economic market, but also serve as a goal for training institutions such as trade schools & universities to reach for their students. Lamri et al. uses France's *l'école* as an example of how standards should also be applied to training or education in a similar fashion to regulations for private industry (2019). The *l'école* are different levels of schools & programs within France's education system where performance informs an individual's placement in the hierarchy of schools and universities. In a similar fashion, Lamri et al. suggests that individuals must be properly educated and trained to adapt to

changes in culture in order to develop the skills necessary to be successful as a professional in the 21ˢᵗ century (2019). The *l'école* is a particularly apt comparison because it is an example of how a country has adopted a systematic approach towards education and training. Could a systematic or standardized approach also be applied towards intercultural training?

At a glance, it may seem that a standardized training approach is diametrically opposed to intercultural training. Intercultural training, by its very nature, is the means by which individuals can competently navigate different cultural contexts which are constantly changing as seen in the fluidity of culture. This state of constant change seems conceptually antagonistic to the static, standardized approach towards teaching or education.

Standardization in education has been the subject of criticism. Rubin et al. (2011) argues the idea of standardized education is seen as critical, and even as a way to dull students' capabilities. Though potentially applicable in a larger sense, does this pattern hold true for smaller, individual trainings? The effectiveness of standardized intercultural training has not been methodologically explored in great detail (Mahadevan, 2021). However, the idea of condensing a broader understanding culture into a shorter workshop form for employees, students, or other participants lends itself well to a standardized training format. Especially if this training was meant to train large groups within one organization over a defined period of time.

Standardized education is advantageous for measurement and evaluation. Such a system is currently in place in Europe through the European Skills/Competences, qualifications, and Occupations (ESCO) taxonomy used to demonstrate acquisition and measure performance of standardized skills within the region (Elken, 2017). A similar system is in place for European Higher Education Institutions through the European Credit Transfer and Accumulation Systems (ECTS) which serve as a measurable means of demonstrating equivalencies across the EU for students taking university courses (Elken, 2017). The ESCO and ECTS systems are examples demonstrating that standardized training in education allows for a measurable way to transfer skills to larger groups (Idowu et.al., 2020). A standardized structure is static, but the structure itself can allow flexible activities or exercises that can be adaptive much like the cultural fluidity approach. Incorporating flexible elements would permit content to develop based on new ideas, emerging research findings, or changes in cultural trends to ensure a personalized training environment and experience. In these parts of the training, trainers have the space and time to fully engage with training participants on a personal level without major hindrance from the static training format.

From an organizational standpoint, the potential benefits of standardized training must be balance with its challenges. Fixed learning materials and content may be more cost-effective and reusable compared to personalized trainings. However, cost & time savings must be balanced with content relevance for the organization. An intercultural training that is cost-effective may seem attractive to an organization financially, but it also risks lowering the return on investment if the content fails to address the specific context, primary activities, or goals of the organization. An organization can similarly benefit from a standardized approach in the longer term since it will be easier to ensure training continuity through simple training sessions if a trainer will hand over the training to another trainer. However, standardized training may not be appropriate for all scenarios. This approach can be effective for addressing a larger volume of people over time. Personalized trainings by comparison, can be substantially more effective for small groups expecting to operate in high-level individual situations. To better determine the viability of standardized training, formats from other fields

were examined to better understand the relationship between a static, standardized training framework and individualized participant experiences.

Evidence suggests there is value in a standardized teaching approach in different teaching environments. In medicine, standardized training scenarios have been a regular part of training & education. Whitmill et al. demonstrated the effectiveness of using standardized patients and clinical scenarios through the use of peer-assisted study sessions (PASS) to improve students' confidence in developing clinical diagnostic skills (2020). These sessions aimed at improving a combination of preclinical knowledge alongside performance experience for students to engage with standardized patients. The PASS groups rotated between standardized patients, each of whom had a consistent, yet distinct presentation of clinical symptoms where medical students improve their hands-on experience in controlled, standardized scenarios. Beyond core medical training, standardization has been applied using standardized parents to teach medical fellows how to communicate extreme clinical situations to children's parents (Vaidya et al., 1999). The static framework for the medical fellows incorporated a significant degree of flexibility and personalized feedback from the standardized parents. These parents provided feedback promoting improved practices for bedside manner and more readily handling emotionally charged conversations. On a larger scale, teaching hospitals in Shanghai have adopted a standardized residency training program (SRT) that showed improved competency in medical residents regardless of their medical specialty or the hospital where they completed their residency (He et al., 2019). Despite the wide variation in clinical scenarios that medical practitioners can face and the ever-changing body of medical knowledge, a standardized approach towards training medical professionals holds merit conceptually and in practice.

Any training approach must be tailored to effectively address the individual or organization's need within an appropriate context. This research focuses on a globalized context for professionals. To be more specific, individuals may find themselves working within a team or organization where they may encounter other individuals, institutions, or environments that are different from their own cultural environment. Individuals must be able to regularly adapt to ongoing cultural change in potentially many different environments. To effectively do so, Lamri et al. argues that educational institutions such as schools and universities should deliberately invest in preparing their students to adapt to these dynamic circumstances through many of the aforementioned intercultural competencies (2019). Higher education can be thought of as one of several gateways for individuals to develop knowledge and competencies that will prepare them for the workforce. Therefore, this research focuses on the higher education environment within a global context.

Higher education institutions play host to a unique environment that position themselves as an incubating environment for students before entry into the professional realm. Here, students may be exposed to individuals from new cultures, new systems of learning, and holistically different experiences than during their primary education. Combined with a newfound sense of freedom and chance to independently develop their identity, many university students experience the day-to-day realities of shifting towards a new cultural environment for the first time. At such an important transition point in students lives, universities should provide some measure of intercultural competencies for students. Intercultural training for international students' global mobility has shown there are various means of implementing training. Paras and Mitchell found that a pre-departure intercultural training seminar had improved Canadian students' intercultural competencies before a trip to

India, but an immersive course during their experience abroad had statistically significant improvement compared to the pre-trip seminar (2017).

Prior research highlights the importance of standardized training within the specific context of higher education. Yang et al. argues standardization is crucial for improving the quality of classroom teaching when paired with individualization to optimize the individual's learning experience (2017). This approach is particularly relevant as it aligns with the knowledge management (KM) approach of MNCs (Ang and Massingham, 2007). More specifically, the KM approach towards management for organizations requires a degree of knowing the national culture of knowledge management within a new culture and a critical understanding of how the organization should adapt to any differences between national and organizational KM. Although not all university students will eventually work for a MNC, it is important to align university standards and expectations with those that are implemented in industry. Furthermore, training has to adapt to the constantly changing technological landscape. This has become more important due to the necessary shifts towards technological mediums during the COVID-19 pandemic. Choi and de Vries highlight the importance of establishing standards for technology education based on trends seen in country analyses of education programs across Asia-Pacific and European regions (2010). The standardized training would, therefore, have to include some measure of technology.

These concepts formed the theoretical foundation of a standardized intercultural training workshop for university students. These are, namely: knowledge retention, individualized learning experience, and the incorporation of technology to effectively teach students. This research sought to explore the gap between the needs for intercultural competencies and determining whether a standardized training format can effectively meet these goals or not.

Body

The standardized intercultural training workshop was developed at the European Campus Rottal-Inn (ECRI) of the Deggendorf Institute of Technology (DIT) located in Germany. The overwhelming majority of the student population are international students hailing from approximately 80 different countries. The diversity of the student population coupled with global perspective integrated into the bachelor and master study programs inherently created a high demand for intercultural competencies. A single, 8-hour workshop was approved to teach students intercultural competencies.

The workshop was developed with the intention to teach university students intercultural competencies through two principal objectives: knowledge retention of intercultural theories and an individualized cultural experience. This reflects common practice in intercultural training as well as patterns of standardized training in other fields. The intercultural theories would be taught through the theoretical components of the workshops while the individualized cultural experience would be taught through student interaction.

The theoretical components of the intercultural competencies workshop were selected based on an average student's expected level of intercultural experience and to align with the university's Intercultural Competence Certificate available to all ECRI students. With such a wide variety of students coming from different parts of the world, it was assumed an average student would have little-to-no intercultural knowledge prior to the start of this workshop. Theories also needed to have real-world relevance for student life on a predominantly international campus.

The practical components of the intercultural competencies workshop were selected based largely on the expectations for students at ECRI. Students from all study programs were able to sign up for this workshop, so it was important to include activities that would not only relate to a classroom setting, but also for student interactions both on & off campus. Though not designed to simulate these scenarios, their relevance needed to translate to interpersonal communication scenarios.

The theoretical & practical components of the standardized training framework also needed to be implementable within a virtual context. Following suit with the traditional lectures and courses, the intercultural competencies training workshop was taught virtually due to COVID-19 pandemic. Zoom was chosen to implement this eLearning workshop.

To determine the ease and effectiveness of this training format, a trainer and moderator pair were selected to run each of the workshops. Trainers were charged with teaching the intercultural theories, guiding the practical elements, and leading the 8-hour workshop. Moderators worked in tandem with the trainers to provide technical support, verify the university requirements for attendance, monitor student participation, and fulfill the role of observer to validate the training format.

The final result was a standardized, modular training format named UNIT FOUR. This format consisted of four theory modules paired with four discussion modules that contained the selected intercultural competency theories as well as activities. This format is seen in Figure 1. Each theory module was paired with a discussion module so all students had the opportunity to apply knowledge from every theory. Theory modules were smaller modules (25 minutes each) taught in a more traditional lecture style with the trainer teaching students the selected intercultural competency theories. The discussion modules were longer than the theory modules (35 minutes each) and students were divided into smaller groups with a discussion prompt. The discussion prompts were self-reflective and centered on the paired theory module. The small student groups spent some time discussing amongst themselves and the trainer later guided a full discussion where students shared the outcomes of their individual group interactions. The training format was designed to be taught in two halves with four modules each (two theory and two discussion modules per half).
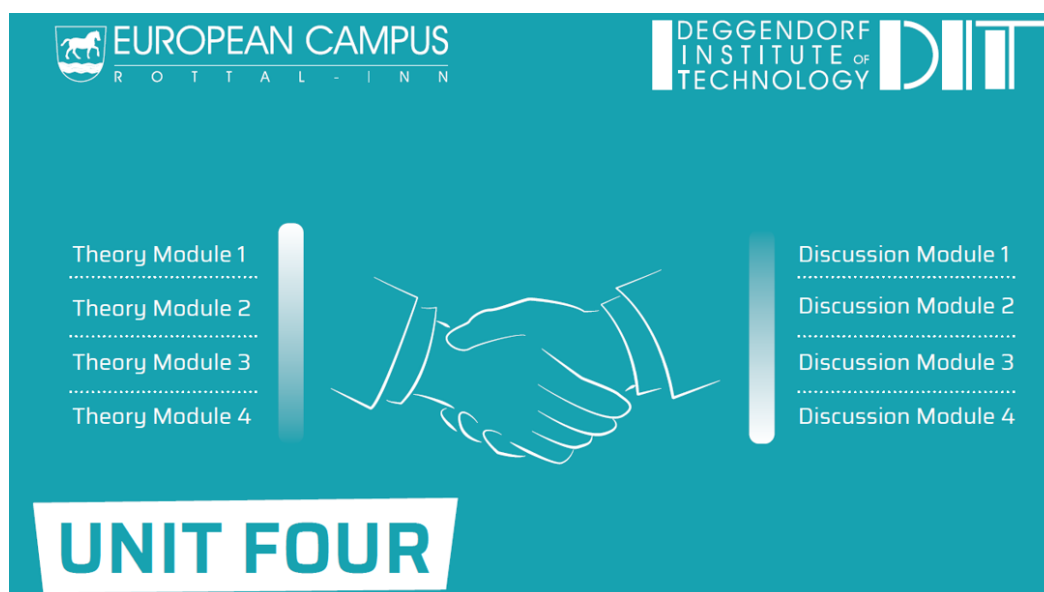

Figure 1: UNIT FOUR Framework

Due to university workshop requirements and data protection regulations, the sample for this workshop was limited. Trainers were selected personnel who were permitted to teach at this university which included administrative staff and university researchers. The moderators were undergraduate students. Both trainers and moderators were compensated for their time training and implementing the workshop. Study participants were limited to students enrolled at ECRI who voluntarily signed up for this workshop. Workshop dates were announced at the beginning of the semester and each workshop appointment was limited to 25 students. The workshop was offered several times throughout the course of two semesters.

To validate the effectiveness of the standardized training format, a mixed methods approach was selected to observe the following:

- Did students retain the theoretical knowledge learned during the workshop?
- Did students have an individualized cultural experience during the workshop?
- How effectively did workshop trainers adhere to the UNIT FOUR standardized framework?
- What were the trainers' and moderators' experience implementing this standardized workshop?

These factors were observed with four trainer/moderator pairs. The first trainer/moderator pair served as a control group since the team was made up of two of the authors. The other three trainer/moderator pairs were trained by this trainer/moderator pair. Each of the following three pairs taught the intercultural competencies workshop twice. Student experience information was collected via direct polling in Zoom during the workshops. The experience was divided into two sections to represent both halves of the workshop. The first half is shown by modules 1 – 4 representing the first two theory and discussion modules while modules 5 – 8 represent the latter two theory and discussion modules. The trainer and moderator experience information were collected via survey that included likert scales as well as open answer sections.

Students reported learning new information with all trainer/moderator pairs as seen in Figure 2. The vast majority of students reported learning new information, particularly from the modules 5 – 8 content.
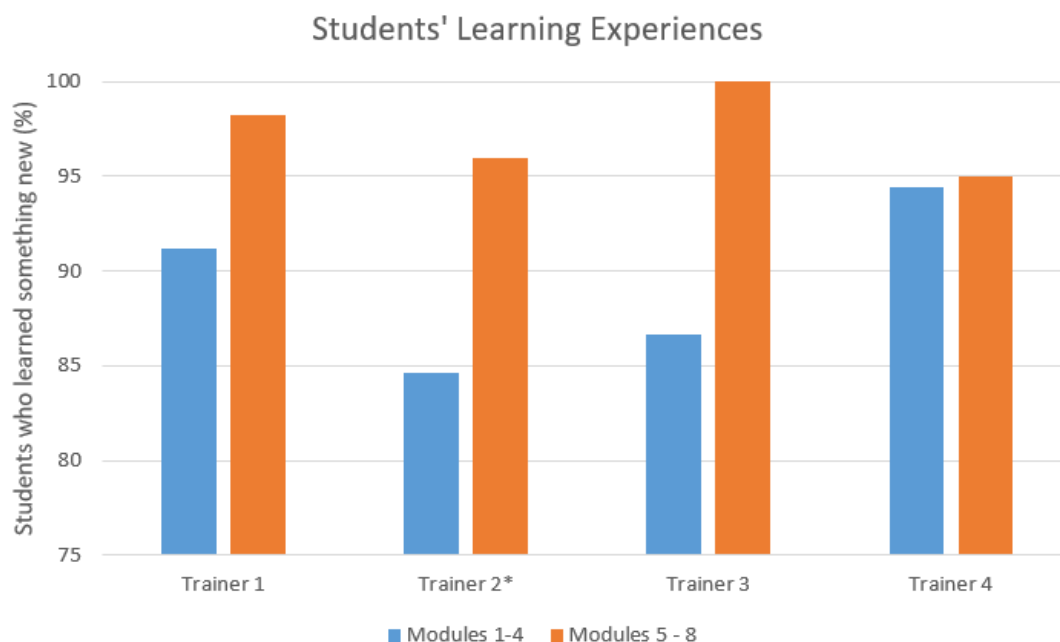
Figure 2: Students' Learning Experiences in the Intercultural Competencies Workshop.
Note: The data for Trainer 2 was incomplete due to some data failing to be recorded after teaching the first workshop.

A similar trend was observed with students' cultural experiences as seen in Figure 3. The majority of students reported a strong individualized cultural experience although it was not as prominent for Trainer 3's first set of modules.
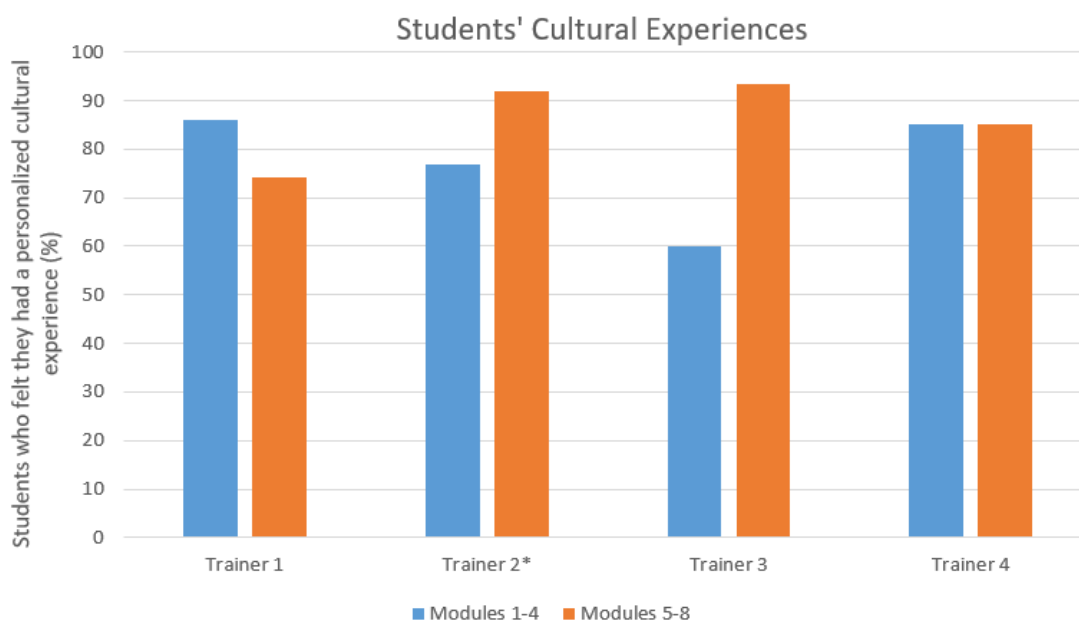

Figure 3: Students' Individualized Cultural Experiences in the Intercultural Competencies Workshop.
Note: The data for Trainer 2 was incomplete due to some data failing to be recorded after teaching the first workshop.

Adherence to the standardized training format was largely uniform in the aggregate across all trainers as seen in Figure 4. There was much more variation in the 4th theory module compared to the rest of the modules, although this is likely due to the higher degree of complexity of the content relative to the other three theory modules.
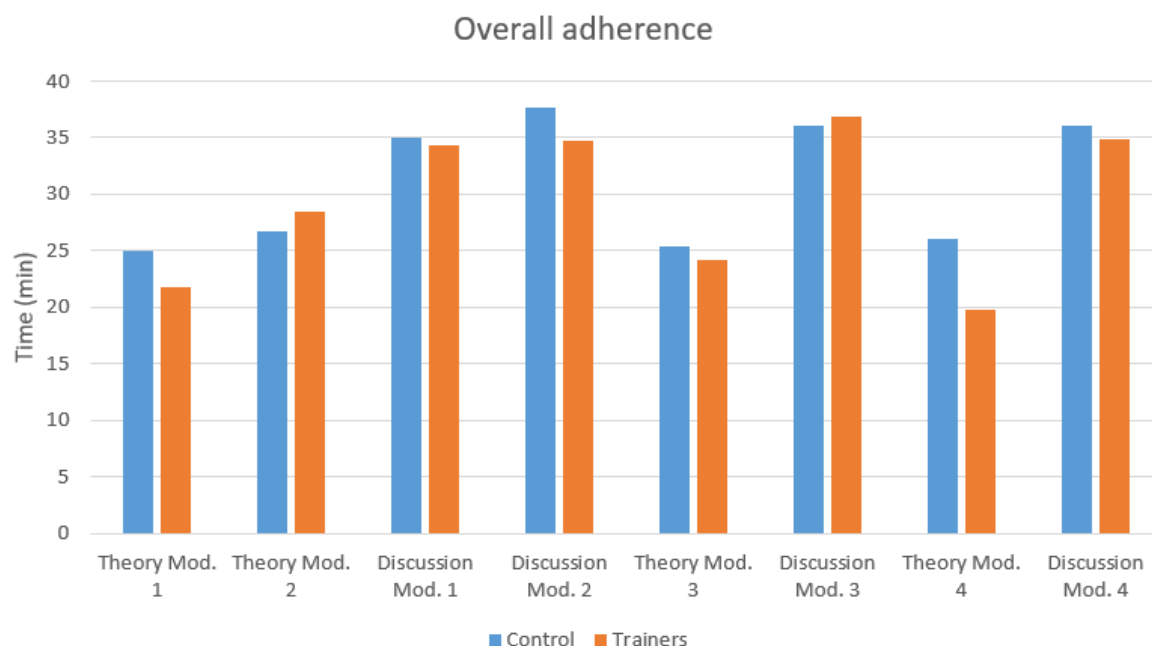

Figure 4: Aggregate Trainer Adherence to UNIT FOUR Standardized Training Modules

Upon closer examination, the adherence patterns in the theory modules stayed consistent with the aggregate pattern as indicated in Figure 5. Most theory modules were close to the planned 25 minutes with the exception of the 4th theory module. The discussion modules were quite consistent across all trainer/moderator pairs with some minor variations to the planned 35-minute modules as seen in Figure 6.
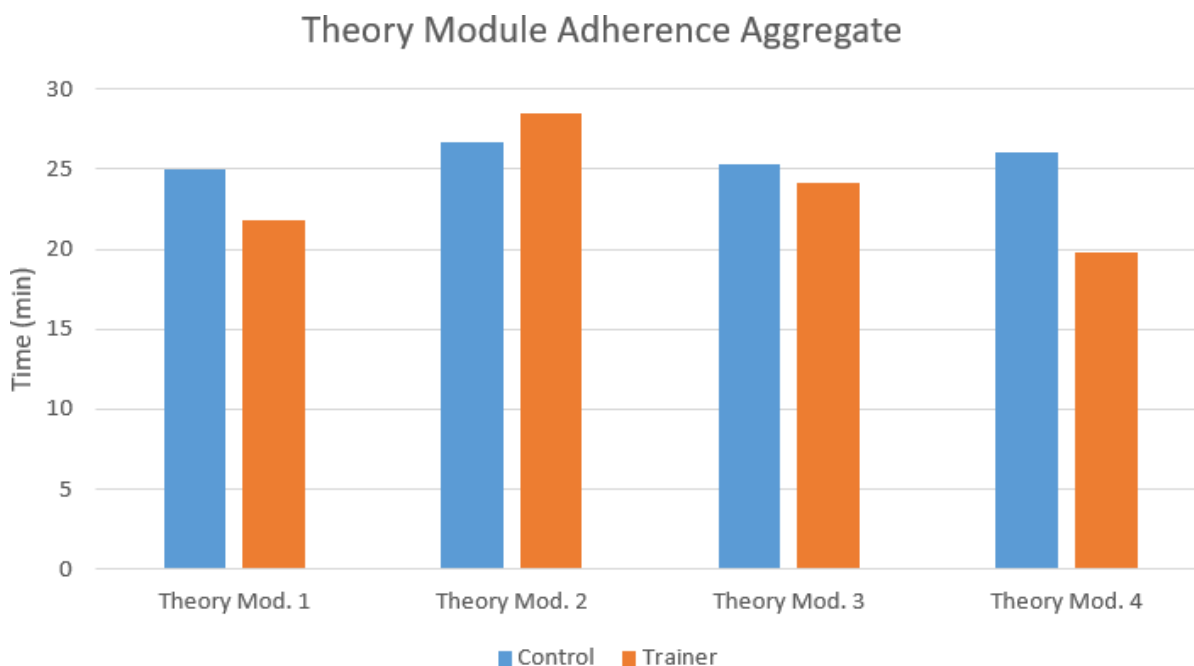

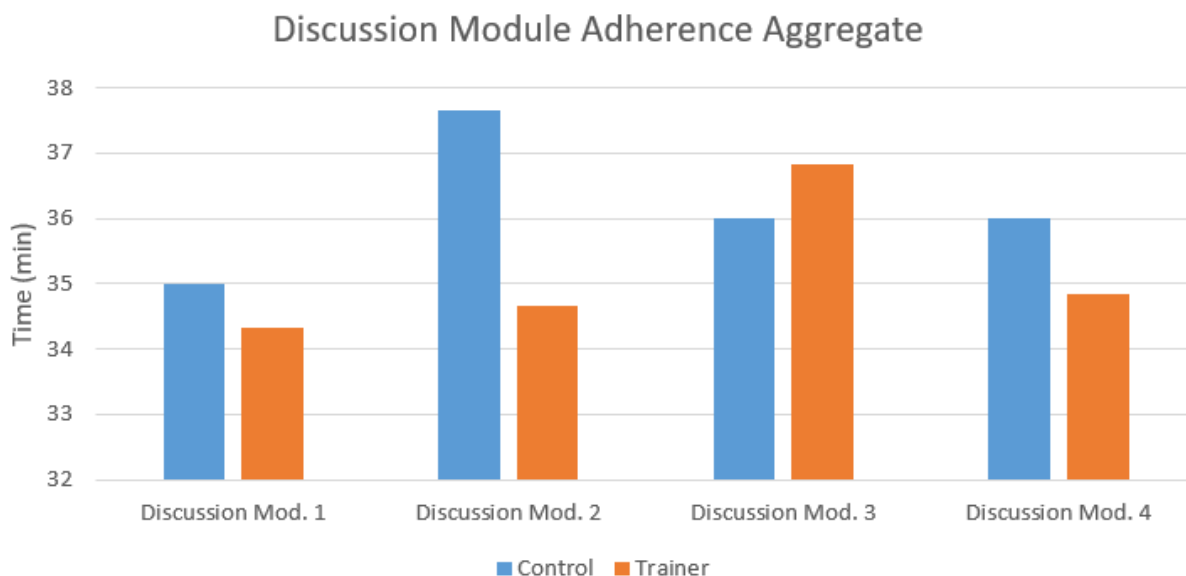Figure 5: Trainer Adherence to UNIT FOUR Theory Modules

Figure 6: Trainer Adherence to UNIT FOUR Discussion Modules

Findings about the trainer and moderator experience for the UNIT FOUR Intercultural Competencies workshop were quite positive. Trainers reported positive and optimistic expectations towards the UNIT FOUR framework. Figure 7 shows the quantitative feedback from trainers' expectations and perceptions of the framework. They found the framework to be quite useful, somewhat easy, and repeatable.
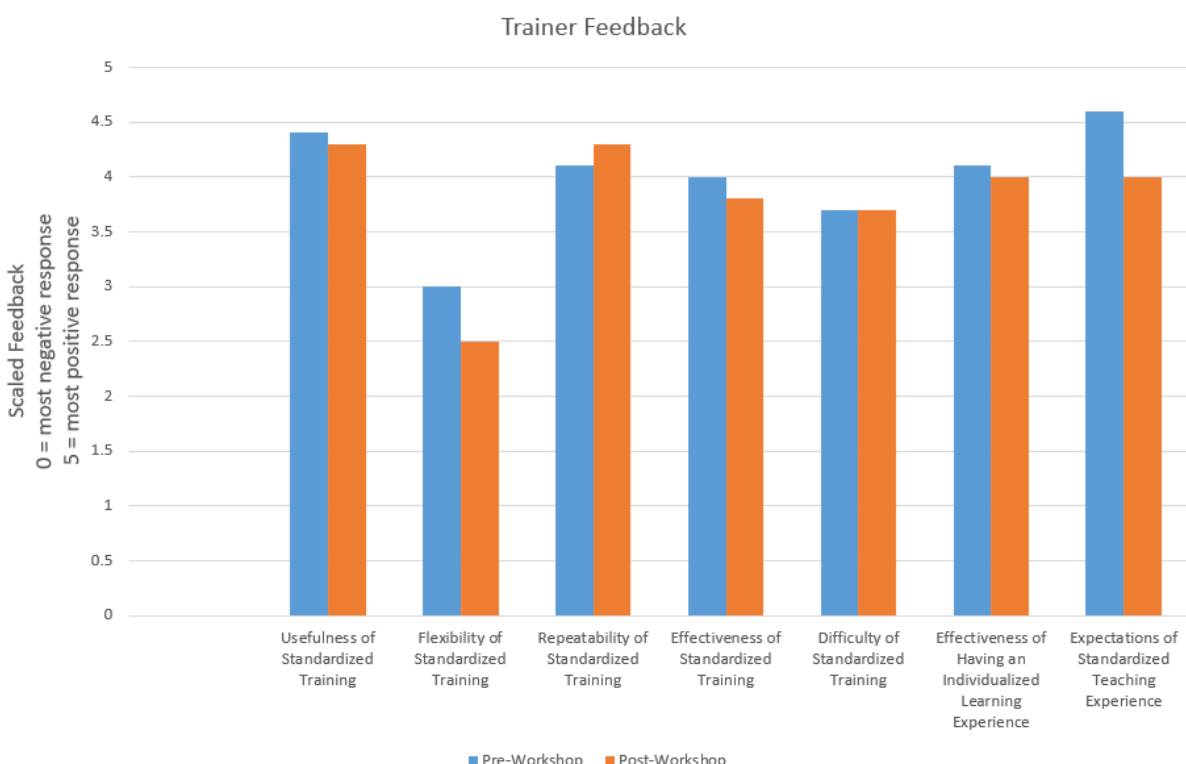

Figure 7: Trainer Feedback on UNIT FOUR Framework

Trainers' qualitative responses were analyzed using thematic analysis and aligned well with the quantitative responses. They reported feeling sufficiently prepared, felt the training format would be effective, and shared positive reflections after conducting the training. There

were mixed reactions about their expectations towards adhering to the UNIT FOUR timing with some trainers feeling confident and others marginally less confident.

Moderators' experiences were rated similarly positive to trainers, although to a lesser extent. As seen in Figure 8, moderators scored positively on all categories of workshop expectations except for the flexibility of the standardized training format. Notably, their responses did not score as positively as trainers.

The thematic analysis of the moderators' open-ended responses followed a similar trend to that of the trainers in that they felt prepared and shared positive reflects after conducting the training. Their outlook on the training as well as their expectations towards adhering to the UNIT FOUR timing was mixed across the different moderators. The latter feedback came from uncertainty towards their role's responsibilities.

When comparing the open-ended responses about the intercultural competencies workshop between trainers and moderators, another trend emerged from the thematic analysis. Trainer feedback was predominantly focused on the workshop's structure and format while moderator feedback was focused on student participants and the training content.
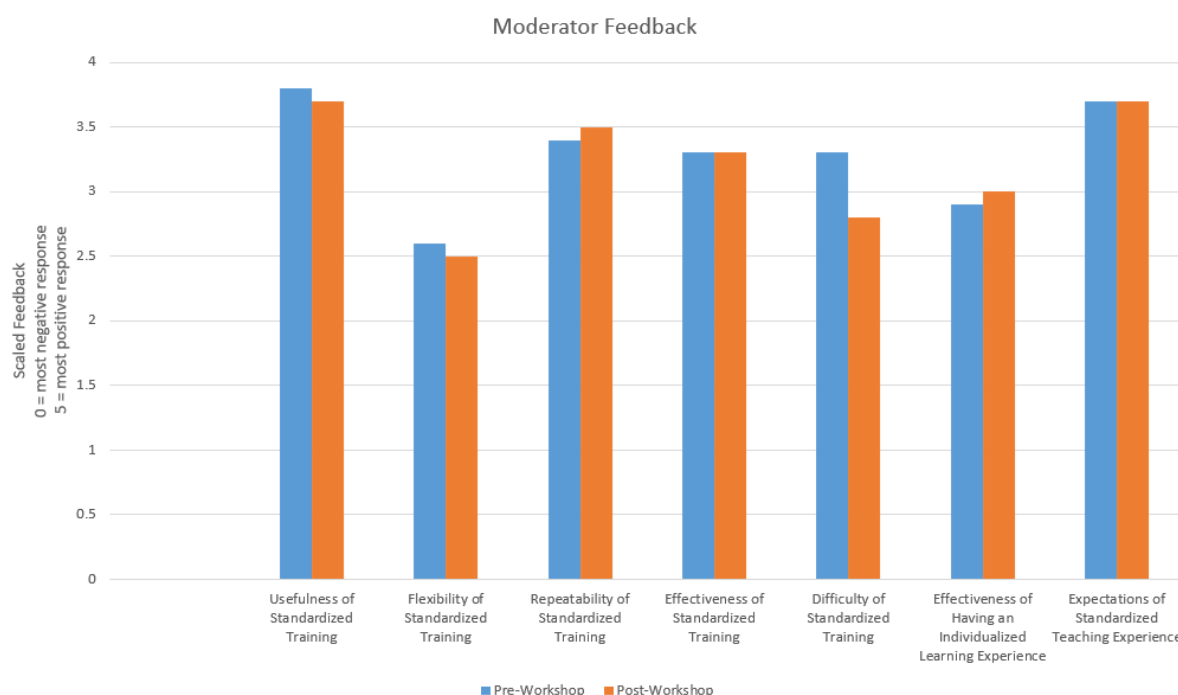

Figure 8: Moderator Feedback on UNIT FOUR Framework

The findings from the mixed methods observation suggest the UNIT FOUR standardized training format is effective for a single-day workshop teaching university students intercultural competencies. Students were able to learn new knowledge through the theory modules while simultaneously having a more personalized cultural experience through the discussion modules. The findings from these metrics is important as they are used to measure the effectiveness of intercultural trainings in industry (Gao et al., 2014) and in higher education (Paras and Mitchell, 2017). The consistency of students' experiences across different trainers suggest the UNIT FOUR format is effective without heavily relying on the knowledge or experience of the trainer. Trainers 3 & 4 did not have a professional intercultural training background or knowledge prior to this study. Their intercultural

knowledge was obtained through a singular training session and access to the publications that informed the theory module and discussion module content.

Alongside student experiences, the positive feedback from the trainers and moderators indicate the standardized training format is effective for its intended use. In the context of teaching small groups over a longer period of time, the feedback from trainers and moderators implementing the UNIT FOUR framework show both roles have an optimistic perspective. This can contribute to the ease by which this format can be implemented and potentially sustained over a long period of time which is particularly meaningful as it can help to curb the pervasiveness of burnout in higher education (Anwar et al., 2019). Additionally, the experience from students and trainers show a standardized approach is not only feasible, but also effective in applying a cultural fluidity perspective.

This promising exploration into applied standardized training is not without its shortcomings. University regulations as well as the data protection regulations at the DIT ECRI limited the ability to select trainers, participants (students), data collection opportunities, and the possible sample size of participants for each workshop. The size of this study sample in particular limits the impact of the patterns and trends observed for UNIT FOUR's implementation. Future studies can investigate whether these trends hold true with other trainers and a larger participant sample pool. The UNIT FOUR framework is theoretically capable of incorporating other content suitable for a single, 8-hour workshop, but these research findings are limited to the intercultural competencies workshop content. UNIT FOUR's modular design enables flexibility to effectively adapt different content for a singular workshop. These workshops can be customized to the target audience as the modules are interchangeable. This modular approach allows this framework to overcome many standardized training limitations. UNIT FOUR's development incorporated elements from other disciplines, but future research would be necessary to validate its viability for content aside from intercultural competencies. Similarly, these findings are also limited by the workshop's virtual delivery. Following the shift to virtual platforms due to COVID-19, the UNIT FOUR framework was designed for virtual training. Further examination is necessary to validate findings and potentially translate this format into an in-person training.

The development and validation of the UNIT FOUR framework indicates a standardized training workshop format is viable within the context of higher education. Despite challenges & criticisms to a static, standardized approach, this study shows there is value to this teaching approach. This exploratory research focused on the validity of this framework intertwined with the emerging concept of cultural fluidity. Standardized training is neither a new concept nor approach, but its implementation has received mixed reviews in the literature. UNIT FOUR is one tool that shows potential for applying a measurable and transferrable means of training individuals without sacrificing the importance of personalization in education.

References

Alasuutari, P. (2015). *The Synchronization of National Policies: Ethnography of the Global Tribe of Moderns* (1st ed.). Routledge. https://doi.org/10.4324/9780203597729

Ang, Z., & Massingham, P. (2007). National culture and the standardization versus adaptation of knowledge management. *Journal of Knowledge Management*, *11*(2), 5–21. https://doi.org/10.1108/13673270710738889

Anwar, K., Siraj, D., & Muhammad, A. (2019). Sources and Adverse Effects of Burnout Among Academic Staff: A Systematic Review. *City University Research Journal*, *9*(2), 350–363. https://www.proquest.com/docview/2414856838?pq-origsite=gscholar&fromopenview=true

Bartel-Radic, A. (2013). "Estrangeirismo" and flexibility: intercultural learning in Brazilian MNCs. *Management International*, *17*(4), 239–253. https://doi.org/10.7202/1020680ar

Boyatzis, R. E., Goleman, D., & Rhee, K. S. (1999). *Clustering competence in emotional intelligence: Insights from the Emotional Competence Inventory.* Case Western Reserve University.

Chan, C. D., & Erby, A. N. (2017). A Critical Analysis and Applied Intersectionality Framework with Intercultural Queer Couples. *Journal of Homosexuality*, *65*(9), 1249–1274. https://doi.org/10.1080/00918369.2017.1411691

Choi, D. G., & de Vries, H. J. (2010). Standardization as emerging content in technology education at all levels of education. *International Journal of Technology and Design Education*, *21*(1), 111–135. https://doi.org/10.1007/s10798-009-9110-z

Elken, M. (2017). Standardization of (higher) education in Europe – policy coordination 2.0? *Policy and Society*, *36*(1), 127–142. https://doi.org/10.1080/14494035.2017.1278873

Gao, H., Knight, J. G., Yang, Z., & Ballantyne, D. (2014). Toward a gatekeeping perspective of insider–outsider relationship development in China. Journal of World Business, 49(3), 312–320. https://doi.org/10.1016/j.jwb.2013.06.002

He, Y., Qian, W., Shi, L., Zhang, K., & Huang, J. (2019). Standardized residency training: An equalizer for residents at different hospitals in Shanghai, China? *The International Journal of Health Planning and Management*, *35*(2), 592–605. https://doi.org/10.1002/hpm.2970

Hofstede, G. (1984). *Culture's Consequences: International Differences in Work-Related Values (Cross Cultural Research and Methodology)* (Abridged ed.). SAGE Publications, Inc. https://books.google.de/books?id=Cayp_Um4O9gC&dq=Culture%27s+consequences:+international+differences+in+work-related+values&lr=&source=gbs_navlinks_s

Idowu, S. O., de Vries, H. J., Mijatovic, I., Choi, D., & de Vries, H. J. (2019). *Sustainable Development*. Springer Publishing. https://doi.org/10.1007/978-3-030-28715-3

Lamri, J., Lesaffre, J., Dutil, V., Rawkins, C., Barabel, M., Meier, O., & Sirbey, B. (2019). *The 21st Century Skills: How soft skills can make the difference in the digital era*. Independently published.

Mahadevan, J. (2021). An auto-ethnographic narrative of corporate intercultural training: Insights from the genealogical reordering of the material. Organization. https://doi.org/10.1177/13505084211041712

Morris, M. W., Savani, K., Mor, S., & Cho, J. (2014). When in Rome: Intercultural learning and implications for training. *Research in Organizational Behavior*, *34*, 189–215. https://doi.org/10.1016/j.riob.2014.09.003

Paras, A., & Mitchell, L. (2017). Assessing Intercultural Competence in Experiential Learning Abroad: Lessons for Educators. *Experiential Learning & Teaching in Higher Education*, *1*(1), 45–64. https://nsuworks.nova.edu/elthe/vol1/iss1/8/

Rubin, Daniel & Kazanjian, Christopher. (2011). "Just Another Brick in the Wall": Standardization and the Devaluing of Education. Journal of Curriculum and Instruction. 5. 10.3776/joci.2011.v5n2p94-108.

Thomas, D. C., Liao, Y., Aycan, Z., Cerdin, J. L., Pekerti, A. A., Ravlin, E. C., Stahl, G. K., Lazarova, M. B., Fock, H., Arli, D., Moeller, M., Okimoto, T. G., & van de Vijver, F. (2015). Cultural intelligence: A theory-based, short form measure. *Journal of International Business Studies*, *46*(9), 1099–1118. https://doi.org/10.1057/jibs.2014.67

Vaidya, V. U., Greenberg, L. W., Patel, K. M., Strauss, L. H., & Pollack, M. M. (1999). Teaching Physicians How to Break Bad News. *Archives of Pediatrics & Adolescent Medicine*, *153*(4). https://doi.org/10.1001/archpedi.153.4.419

Whitmill, A., Edwards, T., & Charles, S. (2020). Training Medical Student Facilitators of Peer-Assisted Study Sessions Using an Objective Standardized Teaching Exercise. *MedEdPORTAL*. https://doi.org/10.15766/mep_2374-8265.10898

Yang, Y., Guo, C., & Sun, L. (2017). *Study on the Standardization and Individuation of Classroom Teaching in Higher Education* (Y. Yang, C. Guo, & L. Sun, Eds.). Atlantis Press. https://doi.org/10.2991/icsshe-17.2017.54

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Identifying Ideologies of War and Peace in EFL Reading Material for Peace Education: Transitivity Analysis Within Systemic Functional Linguistics

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Abstract

Peace education has contributed to world peace, illuminating direct, structural, and cultural forms of violence and equipping individuals with information and experiences that help them develop the knowledge, skills, behaviors, and values required to promote peace. However, little research has been conducted by TESOL professionals into this realm. This study suggests that a useful form of pedagogy for peace education is critical reading, through which learners read a text, interrogate the ideologies reflected in it, and are motivated for social change. However, difficulty may arise when different educators and learners interpret different inherent ideologies in the same reading material. This study aims to introduce a method to identify ideologies inherent in EFL reading material related to peace education. Two types of the reading texts were selected for the analysis: (1) a story about storytellers who experienced the atomic bombing of Hiroshima, and (2) a report on US President Obama's speech made in 2016 on the atomic bombing. As an analytical tool, the transitivity system within systemic functional linguistics was used to clarify the ideological representation of activities related to the stories. The analysis showed that each text has different descriptive patterns of ideologies: one text expressed the importance of talking for peace; the other put more emphasis on taking action to promote peace. These findings could help TESOL educators promote critical teaching practice for peace education.

Keywords: Peace Education, Ideology, Transitivity Analysis

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1. Introduction

1.1 Peace education

Peace education has contributed to world peace, illuminating direct, structural, and cultural forms of violence and equipping individuals with information and experiences that help them develop the knowledge, skills, behaviors, and values required to promote peace (Bajaj, 2019). Peace education is a teaching and learning practice that aims at ending all forms of violence, and making social equity and justice achievable and sustainable (Kruger, 2012). It requires "the transmission of knowledge about requirements of, the obstacles to, and possibilities for achieving and maintaining peace; training in skills for interpreting the knowledge; and the development of reflective and participatory capacities for applying the knowledge to overcome problems and achieve possibilities" (Reardon, 2000, p. 399). Within the study of peace education, there are two core concepts of peace: negative peace and positive peace (Galtung, 1969). Negative peace is defined as the absence of personal (direct) violence, including physical and/or psychological violence (e.g., war, genocide, militarism). Positive peace is defined as the absence of structural (indirect) violence, that is, as social justice. Structural violence refers to the systems that privilege some and marginalize others (e.g., racism, sexism, colonialism). Traditionally, research on peace education has mainly focused on international peace and direct violence; however, recent research broadens its themes to include education in understanding the perspectives of others and developing conflict resolution skills, education in social equity and justice, environmental education, and multicultural education. It has been argued that "the aspect of actually problematizing war can be lost in this exceedingly wide array of contexts" (McCorkle, 2017, p. 5). In addition, with regard to peace education in the TESOL area, several studies have been conducted aiming at realizing both negative and positive peace (e.g., Arikan, 2009; Gebregeorgis, 2016; Mirici, 2008; Tulgar, 2018); however, how peace education could be applied to this realm has not been sufficiently investigated.

This study suggests that one form of TESOL classroom pedagogy that could facilitate peace education is critical reading. Critical reading is a teaching and learning practice that enables learners to: (1) identify ideologies inherent in texts, (2) recognize their own position on these ideologies, (3) see the texts from multiple perspectives, and (4) facilitate social change (Sun, 2017). It is vital that learners are critically engaged in reading activities (Díaz & Deroo, 2020; Kruger, 2012; Sun, 2017) since reading material usually conveys particular values and ideology, which might shape and induce change in learners' attitudes and perceptions.

1.2 Ideology and language

Generally, ideology is defined as the view that members of a particular social group have about the world (Morris, 2009). It is "the power and place of meaning in how humans behave and organize our ways of living" (Lukin, 2019, p. 1). Ideology is ubiquitous in every interaction in which our everyday life is formed, including private and public interactions, connecting it closely to our daily habits (Malešević, 2017). In the process of researching and/or providing peace education, there might arise a difficulty in interpreting ideology, since "the same world can appear differently to different observers" (Mannheim, 1936, p. 5). Therefore, we need to see the world from multiple perspectives.

Insights from the field of linguistics have been employed to clarify and understand the nature of ideology, and there are three options for doing so proposed so far (Lukin, 2019; see Figure

1). This study supports the third position, namely, systemic functional linguistics (SFL), in which the relations between ideology and language are inextricably interconnected (Lukin, 2019). From this perspective:

> language is always ideological, and ideology depends on language. Language cannot escape ideology. All language use involves ideology, and so ideology is ubiquitous——in our everyday encounters as much as in the business of the struggle for power within and between nation states. At the same time, ideology requires language. Its key characteristics——its power and pervasiveness, its mechanisms for continuity and for change——all come out of the inner organisation of language (Lukin, 2019, p. 16).

Figure 1: *Three possible ways of relating ideology and language*
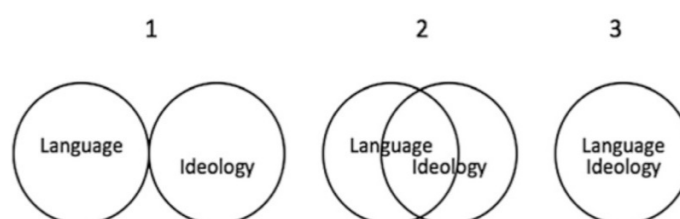
Note. According to Lukin (2019), a scholar who supports the first option is Chomsky; those of the second are Lakoff, van Dijk, Verschueren, and Fairclough; and those of the third are Vološinov, Sapir, Whorf, Firth, Saussure, Halliday, and Hasan. Adapted from Lukin (2019, p. 12).

SFL sees language from local and global perspectives (Martin & Rose, 2008; see Figure 2). It focuses on "the model of language in social context" (p. 3). Social context (or genre) is realized through three register variables: field (i.e., subject matter); tenor (i.e., relationship between interactants); and mode (i.e., modes of communication). These variables are then, realized through three metafunctions of language: ideational metafunction, interpersonal metafunction, and textual metafunction. The ideational metafunction refers to language resources for representing our experience; the interpersonal metafunction refers to those for creating our social relationships; and the textual metafunction refers to those for organizing our experience and relationships as meaningful text (Martin & Rose, 2008). "As social discourse unfolds, these three functions are interwoven with each other, so that we can achieve all three social functions simultaneously" (Martin & Rose, 2008, p. 7). Thus, SFL enables us to interpret ideology from multiple perspectives through the lens of language.

Figure 2: *Systemic functional view of language*
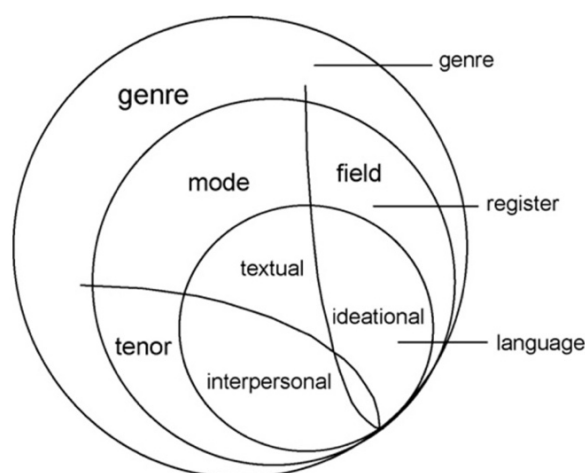
Note. Genre, register and language are stratified and interwoven with each other. Adapted from Martin (2009, p. 12)

1.3 Ideology from transitivity perspective

Transitivity is a system within the ideational metafunction of language that sees the grammar of clauses as a representation of activities, experiences and ideologies. The system comprises two different models that complement each other: the transitive model and the ergative model (Halliday & Matthiessen, 2014). The transitive model (see Figure 3) indicates that clauses express (1) what is happening (i.e., processes), (2) who/what is taking part in the processes (i.e., participants), and (3) what the detailed surroundings of the activity are (i.e., circumstances). More specifically, processes are realized by verbal groups and categorized into six types: (1) material processes (i.e., activity in physical world), (2) mental processes (i.e., activity in the inner world of thinking, feeling, and perceiving), (3) verbal processes (i.e., verbal activity), (4) relational processes (i.e., being and having), (5) behavioral processes (i.e., physiological and psychological activity), and (6) existential processes, (i.e., existing). Participants are realized by nominal phrases, and their roles are assigned depending on the choice of processes (e.g., Actor, Senser, Sayer). Circumstances are realized by adverbial phases or prepositional phrases, and give the details (e.g., time, space, causality) on the surrounding activities (Halliday & Matthiessen, 2014).

Figure 3: *The system of transitivity: Transitive model*
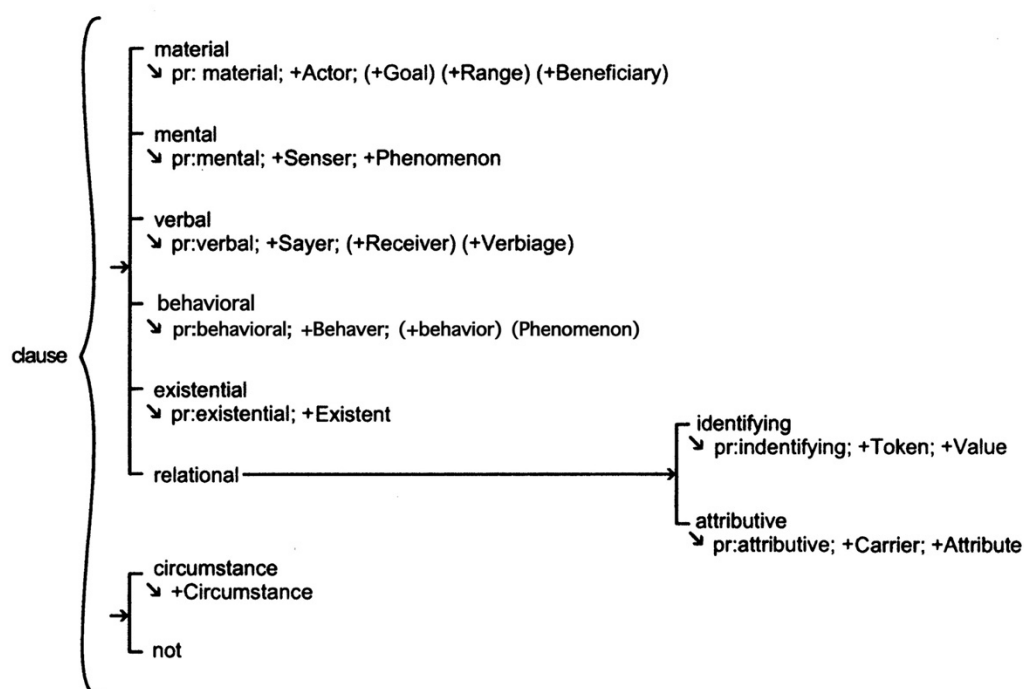
Note. The transitive model is classified into the major and minor systems. The major one includes process and participant, and the minor is circumstance. Adapted from Eggins (2004, p. 214).

On the other hand, the ergative model generalizes across different processes, and sees participants as either a Medium (i.e., a participant actualized by a process) or an Agent (i.e., a participant who causes the actualized process) (Halliday & Matthiessen, 2014). Table 1 is the examples of clauses that are analyzed through the lens of both transitive and ergative models. Example 1 shows that the transitive model sees a human being, *Shawn*, as Actor and an artefact, *the door*, as Goal while the ergative model sees him as Agent and *the door* as Medium. In Example 2, the transitive model sees *the door* as Actor while the ergative one sees it as Medium, which implies that a being (i.e., the Agent) who opened the door exists. In these ways, the ergative model answers a question about the causation of particular processes: "is the process brought about from within, or from outside?" (Halliday & Matthiessen, 2014, p. 339).

Table 1: *Transitivity analysis from the transitive and ergative perspectives*

Example 1	*Shawn*	*opened*	*the door.*		Example 2	*The door*	*opened.*
Transitive model	Actor	Process	Goal		Transitive model	Actor	Process
Ergative model	Agent	Process	Medium		Ergative model	Medium	Process

Previous research has explained ideologies of war and peace from the transitivity perspective (e.g. Díaz & Deroo, 2020; Hammpel, 2014; Li, 2010; Lukin, 2019; Seo, 2013); however, little research from a linguistic perspective appears to have been conducted on ideologies of war and peace in relation to promoting peace education. In order to fill the existing research gaps described above and promote peace education in ESL/EFL contexts, this study aims at examining the ideologies of war and peace inherent in English textbooks used in an EFL context. The research question is twofold: (1) What ideologies of war and peace are inherent in the EFL textbooks? (2) What are the ideological differences between the texts? This study might help TESOL educators to critically interpret the ideologies in teaching material on their own and apply their findings to the classroom practice of peace education.

2. Methodology

2.1 Material

To answer the above research questions, two texts were selected from two different English textbooks currently used in public and private lower secondary schools in Japan (Years 7–9). The main theme of these texts is "war and peace." The specific theme is "the atomic bombing of Hiroshima in 1945." The textbooks were designed based on the national curriculum framework of English education for lower secondary schools in Japan—the Course of Study guidelines, which intend to not only develop language skills but also foster a spirit of world peace and international contributions (MEXT, 2017). Text 1 (T1) is a story about storytellers who experienced the atomic bombing of Hiroshima, titled "Never Forget the Day" (Keirinkan, 2021) while Text 2 (T2) is a report on US President Barack Obama's speech made in Hiroshima in 2016, titled "World without Nuclear Weapons" (Tokyo Shoseki, 2021). These texts were selected since both focus on the same theme but each takes a distinct approach to describing the activities that occurred during and after the war.

2.2 Transitivity Analysis

To begin with the transitivity analysis, Text 1 (T1) and Text 2 (T2) were set out clause by clause since the clause is the basic unit of meaning, and each clause was numbered in the ascending order (see Table 2 and 3). Second, the clauses were classified into particular functions of language based on the transitive model, which identifies different types of processes, and the ergative model, which generalizes different types of processes. Finally, the frequency of each process was counted and compared between the texts.

Table 2: *Text 1 (T1): "Never Forget the Day"*

Time Period	Clause No.	Clauses
After the war	1.1	*Kataribe*, storytellers, **tell** stories about their experiences.
	2.1	Okada Emiko, a *kataribe*, **has spoken** about her experience on August 6, 1945.
	3.1	Her story **tells** us
During the war	3.2	how tragic that day **was**.
	4.1	She **was** eight years old
	4.2	when the bomb **hit** Hiroshima.
	5.1	The moment she **saw** the flash of the bomb,
	5.2	her body **was thrown** to the floor.
	6.1	She **saw** "Hell"
	6.2	when she **went** outside.
	7.1	Everything **was destroyed** and on fire.
	8.1	People's skin **was burned**
	8.2	and **hanging** down like rags.
	9.1	People **died** one after another.
	10.1	She **didn't know**
	10.2	what to **do**.
After the war	11.1	The war **ended**,
	11.2	and Japanese people **live** peacefully now.
	12.1	She **says**
	12.2	"It **is** important to continue
	12.3	**talking** about that day."
	13.1	However, the atomic bomb survivors **are getting** old
	13.2	and the number of *kataribe* **is decreasing**.
	14.1	Hiroshima City **is carrying out** a project
	14.2	to **train** successors of *kataribe*.
	15.1	Students of the project **did not experience** that day in 1945.
	16.1	However, they **have** a strong will
	16.2	to **pass down** the experiences of *kataribe*.
	17.1	Yamaoka Michiko, a successor of *kataribe*, **says**,
	17.2	"I **know**
	17.3	what our mission **is**.
	17.4	It **is** not only **repeating** their stories,
	17.5	but **giving** the facts."
	18.1	We **should never forget** their experiences on August 6, 1945.
	19.1	Successors of *kataribe* **will continue talking** about that day.

Note. Processes in the clauses are described in bold and the activities that occurred during and after the war are distinguished. Adapted from *Blue sky: English course 3*; Keirinkan (2021, pp. 40–41).

Table 3: *Text 2 (T2): "World without Nuclear Weapons"*

Time Period	Clause No.	Clauses (**Process**)
After the war	1.1	On May 27, 2016, a man **visited** Hiroshima
	1.2	and **gave** a speech at the city's Peace Memorial Park.
	2.1	He **began**,
During the war	2.2	"Seventy-one years ago, on a bright, cloudless morning, death **fell** from the sky
	2.3	and the world **was changed**."
After the war	3.1	The man's name **is** Barack Obama.
	4.1	He **became** the first sitting U.S. president
	4.2	to **visit** Hiroshima.
	5.1	It **meant** a lot to the city, to Japan, and to the world.
	6.1	Before the speech, Obama **visited** the museum there.
	7.1	In its guest book, he **left** these words:
	7.2	We **have known** the agony of war.
	7.3	Let us now **find** the courage, together,
	7.4	to **spread** peace,
	7.5	and **pursue** a world without nuclear weapons.
	8.1	He also **left** two paper cranes there.
	9.1	They **were folded** by Obama himself.
	10.1	Obama **closed** his speech
	10.2	by **saying,**
During the war	10.3	"The world **was** forever **changed** here.
After the war	10.4	But today, the children of this city **will go through** their day in peace.
	10.5	What a precious thing that **is**!
	10.6	It **is** worth
	10.7	**protecting**,
	10.8	and then **extending** to every child."

Note. Processes in the clauses are described in bold, and the activities that occurred during and after the war are distinguished. Adapted from *New horizon: English course 3*; Tokyo Shoseki (2021, p. 55).

3. Findings and discussion

3.1. Text 1: Story about storytellers who experienced the atomic bombing

Table 4 shows the distribution of process types in T1. Four types of processes were identified in T1, which consists of 35 clauses. The text was mainly composed of material processes (40.0%), followed by verbal processes (25.7%), relational processes (20.0%), and mental processes (14.3%).

Table 4: *The choice of processes in T1*

Process type	Processes in T1		Samples extracted from T1
	Number	Percentage	
Material	14	40.0%	*hit, throw, go, destroy, burn, hang, die, do, end, live, decrease, carry out, experience, pass down*
Verbal	9	25.7%	*tell, speak, say, talk, repeat, give*
Relational	7	20.0%	*be, get, have*
Mental	5	14.3%	*see, know, forget*
Existential	0	0.0%	
Behavioral	0	0.0%	
TOTAL	35	100.0%	

3.1.1 Clauses during the war in T1

The activities that occurred during the war were mainly organized by material processes. For example, the atomic bomb takes a role as Actor who destroyed Hiroshima (as Goal) in clause 4.2; however, the agent who dropped the bomb (i.e., the United States) was not identified from the ergative perspective. Everything in Hiroshima, including people and buildings (also as Goals), is described as being physically affected by the bomb in clauses 5.2, 7.1, and 8.1. In these clauses, the passive voice was used, which could make the Actor and Agent of these Goals implicit. In clauses 6.2, 8.2, and 9.1, victims and their body parts take the role of Actor, which highlights the victims' viewpoint on the war situation. Clause 6.2 shows that the only action a victim could take was to *go outside* to escape from the situation. Through mental processes, the viewpoint of the victim is emphasized as that of Senser, who *saw the flash of the bombs* in 5.1, recognized the situation as *Hell* in 6.1, and did not have any thought about what to do in the hell in 10.1 and 10.2. Finally, through a relational process, a quality epithet, *tragic* (as Attribute), is assigned to the war (as Carrier) in 3.2. In sum, the expression of activities during the war highlights the viewpoint of victims through material and mental processes, and the meaning of the war is expressed as hell and (being) tragic, through mental and relational processes.

3.1.2 Clauses after the war in T1

The activities that occurred after the war were realized through material, verbal, relational, and mental processes. First, through material processes, the war (as Actor) ended, but without any Agent to end it, in 11.1. Two Actors taking action for promoting peace appear in the text: (1) the successors of storytellers (e.g., *passing down the experiences of victims*) in 16.2, and (2) Hiroshima City (e.g., *carrying out a project*; *training successors of kataribe*) in 14.1 and 14.2. In 11.2, Japanese people (as Actor) are said to be *living peacefully*; but the Agent who actualizes peace is made implicit. Through verbal processes, storytellers and their successors frequently play the role of Sayer, providing information on their war experiences and highlighting the importance of disseminating information verbally (e.g., *tell stories about their experiences; has spoken about her experience on August 6, 1945; repeating victims' stories; giving the facts about the war*) in clauses 1.1, 2.1, 3.1, 12.1, 12.3, 17.1, 17.4, 17.5, and 19.1. Through relational processes, *talking about that day* (as Carrier) has being *important* for realizing peace in clauses 12.2 and 12.3. In clause 12.2, the successors (as Token) are defined as *having a strong will to pass down the experiences of kataribe*, which could validate their activities to promote peace. Finally, through a mental process, the successors (as Senser) are expressed to be those who recognize their roles in promoting peace: *never forget the war*, in 18.1. To summarize, it is emphasized in the text that storytellers, their successors, and the local government take a variety of actions to promote peace. In addition, the importance of saying/speaking to realize peace is highlighted by the frequent use of verbal processes, which is intensified by attributing importance to saying and by introducing a Senser who never forgets the war.

3.2 Text 2: Report on US President Obama's speech on the atomic bombing of Hiroshima

Table 5 shows the distribution of process types in T2. The text consists of 25 clauses, and 4 types of processes were identified. Interestingly, material processes were most dominant (68.0%), followed by relational processes (20.0%), verbal processes (8.0%) and mental processes (4.0%).

Table 5: *The choice of processes in T2*

Process type	Processes in T2		Samples extracted from T1
	Number	Percentage	
Material	17	68.0%	*visit, fall, change, find, spread, pursue, leave, fold, go through, protect, extend, give a speech*
Verbal	2	8.0%	*begin, say*
Relational	5	20.0%	*become, mean,* be
Mental	1	4.0%	*know*
Existential	0	0.0%	
Behavioral	0	0.0%	
TOTAL	25	100.0%	

3.2.1 Experiential expression during the war in T2

All the activities that occurred during the war are realized by material clauses. First, *death* takes a role as an Actor, who *fell from the sky* in 2.2. In this clause, the verb *die* is nominalized to take the role of Actor (*death*), and this shift might depersonalize the fact that people in Hiroshima were killed by the bombing. Additionally, from the ergative perspective, the Agent who caused the death is made implicit, which could function to depersonalize the causative fact or nature of the death (the fact that someone *killed* them). Second, *the world* as Goal is expressed by using passive voice to say *the world was changed* in clauses of 2.3 and 10.3. By being passive and abstract, and shifting to the larger consequences, it gives us a more depersonalized account of this. In this way, all the activities were realized by material processes, and this could give us a depersonalized impression of the violence.

3.2.2 Experiential expression after the war in T2

The activities that occurred after the war are primarily realized through material processes in both texts. First, Obama (as Actor) plays a role in promoting peace by: (1) visiting Hiroshima and the Peace Memorial Park in 4.1 and 6.1, (2) giving a speech, leaving his words, and closing his speech by expressing his condolences to the victims and encouraging audiences to pursue peace, in 1.2, 7.1, and 10.1, and (3) folding and leaving paper cranes, which are a symbol of peace in Japanese culture, in 8.1 and 9.1. Second, a generalized *we* appears several times in succession as an Actor who promotes peace, by (1) finding courage, (2) spreading peace, (3) pursuing a world without nuclear weapons, in clauses 7.3, 7.4, and 7.5. In addition, the implicit generalized *we* also plays a role as Actor who protects the children of the city, and extends the fact that the children in Hiroshima live in peace to every child in 10.7 and 10.8. In these ways, the frequent reference to Obama and the generalized *we* as Actor could function to highlight the perspectives of Obama (or the U.S.) and *us* (people in Japan, the U.S., and the world) on war and peace. Through relational processes, the fact that the children of Hiroshima go through their day in peace (as Carrier) is characterized as *a precious thing*, *worth protecting*, and *worth extending to every child*, in 10.6, 10.7, and 10.8. In addition, Obama (as Carrier) is defined as *the first sitting U.S. president to visit Hiroshima*, and this fact has attributed to it *mean[ing] a lot* in 4.1 and 5.1. This suggests that the use of relational processes validates Obama's action in pursuit of peace. Finally, through a mental process, the generalized *we* takes the role of Senser, who recognizes the agony of war; however, a nominalized participant, *agony*, is used to evaluate war, instead of describing the fact that *people have been agonized over war*. This could make us feel that the war and its victims' feelings are depersonalized to some extent. Also, the use of *war* rather than *the war* could function to generalize *the war*. In sum, the war and the associated feelings are generalized from the perspective of Obama (or the U.S.), and the frequent use of Obama and the generalized *we* as Actor highlights the importance of taking action to promote peace.

3.3 Comparison between T1 and T2 from transitivity perspective

The transitivity analysis demonstrated how the activities during and after the war were realized through different types of processes. Figure 4 shows an overview of the proportions of process types that appeared in T1 and T2. The most important finding is the distinct difference in material processes between T1 (40.0%) and T2 (60.8%). This finding suggests that T2 puts more emphasis on taking action to prevent war and realize peace than T1. Another important finding is that the proportion of verbal processes in T1 (25.7%) is more dominant than that in T2 (8.0%). This suggests that the importance of talking about war and peace is more significantly highlighted in T1 than in T2. Third, mental processes in T1 (14.3%) are more frequently used than in T2 (4.0%). This finding suggests that what the characters of T1 see, feel, and think is regarded as much more significant than in T2. Finally, it was found that relational processes are used to the same degree (20.0%) between T1 and T2. In both texts, relational processes are used to attribute the writers' positionality to the activities associated with war and peace.

Figure 4: *Comparison of process types between T1 and T2*
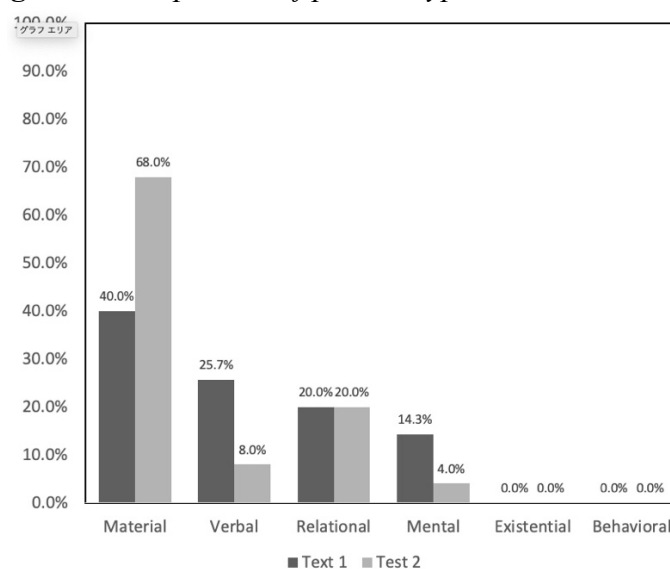
4. Pedagogical implications

How can TESOL educators integrate the present findings into their classroom practice of peace education? Sun (2017) argues that teachers should engage learners in sustained inquiries about what they have learned in their reading for peace education. Following this line, asking questions from the transitivity perspective might help learners develop their skills in critical reading, through which they perceive reading texts as nonneutral, take their own position on the ideology inherent in the texts, and, in the peace education context, think about what they can do to promote peace. For example, when studying Text 1, teachers might ask the following questions: (1) Why does *the bomb hit Hiroshima* NOT describe the agent who dropped the bomb, and if you were the writer, how would you describe the event? (2) What did the war victims experience during the war, and what do you feel about it? (3) After the war, what activities for promoting peace are highlighted, and do you think this will contribute to making a more peaceful world? In Text 2, the teachers could ask: (1) Why did Obama use *death fell from the sky* rather than *the bomb was dropped* or *many people in Hiroshima were killed by the bomb*, and if you were the writer, how would you describe the event? (2) Why did Obama use passive voice, *the world was changed*, to express the effect of the atomic

bombing? (3) In his speech, what activities are highlighted for promoting peace, and do you think they will contribute to making a more peaceful world? (4) Why did Obama often use *we* and *us* in his speech? By providing opportunities to make these inquiries, leaners could develop an understanding of (1) the writer/speaker's intention to describe the war in that way, (2) the emotional impacts of violence, (3) what position they could take in the peace initiatives, and (4) the persuasive nature of the messages in the texts. In sum, these inquiries could help L2 learners not just develop their language skills, but become a critical reader of war and peace.

5. Conclusion

This study has explored EFL reading materials about war and peace from the transitivity perspective to help TESOL educators clarify the ideologies inherent in the texts and promote critical teaching practice in peace education. The findings clearly indicate that the activities that occurred during and after the war were differently realized between the two texts by prioritizing different processes in the texts, and thus each text could provide readers with a particular distinctive ideology concerning war and peace. Therefore, the transitivity perspective could help L2 learners become both a language learner and a critical thinker. However, there is at least one substantial limitation of this study: From the perspective of SFL, ideologies are realized through three metafunctions, while this study only focused on the ideational metafunction through transitivity analysis. Thus, further research is required to clarify the other ideological aspects of the texts, which could help TESOL educators more actively promote critical teaching practice in peace education.

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References

Arikan, A. (2009). Environmental peace education in foreign language learners' English grammar lessons. *Journal of Peace Education, 6*(1), 87-99.

Bajaj, M. (2019). Conceptualising critical peace education for conflict settings. *Education and conflict review, 2*, 65-69.

Díaz, E., & Deroo, M. R. (2020). Latinxs in contention: A systemic functional linguistic analysis of 11th-grade US history textbooks. *Theory & Research in Social Education, 48*(3), 375-402.

Eggins, S. (2004). *Introduction to systemic functional linguistics*. A&C Black.

Galtung, Johan. (1969). Violence, peace and peace research. *Journal of Peace Research 6*(3): 167–191.

Gebregeorgis, M. Y. (2017). Peace values in language textbooks: the case of English for Ethiopia Student Textbook. *Journal of Peace Education, 14*(1), 54-68.

Halliday, M. A. K., & Matthiessen, C. M. (2013). *Halliday's introduction to functional grammar*. Routledge.

Hampl, M. (2014). The System of Transitivity in the War on Terror Discourse. *Communications-Scientific letters of the University of Zilina, 16*(3), 46-51.

Keirinkan. (2021) *Blue sky: English course 3.*

Kruger, F. (2012). The role of TESOL in educating for peace. *Journal of Peace Education, 9*(1), 17-30.

Li, J. (2010). Transitivity and lexical cohesion: Press representations of a political disaster and its actors. *Journal of Pragmatics, 42*(12), 3444-3458.

Lukin, A. (2019). *War and its ideologies: A social-semiotic theory and description*. Springer.

Malešević, S. (2017). *The rise of organised brutality*. Cambridge University Press.

Mannheim, K. (1936). *Ideology and Utopia*. New York, Harcourt, Brace and World.

Martin, J. R. (2009). Genre and language learning: A social semiotic perspective. *Linguistics and education, 20*(1), 10-21.

Martin, J. R., & Rose, D. (2008). *Working with discourse: Meaning beyond the clause*. Bloomsbury Publishing.

McCorkle, W. (2017). Problematizing war: reviving the historical focus of peace education. *Journal of Peace Education, 14*(3), 261-281.

MEXT. (2017). *Chugakkou gakushu shidou youryou kaisetsu: Gaikokugo hen*. [The course of study: Foreign language]. Japan: MEXT.

Mirici, I. H. (2008). Training EFL/ESL teachers for a peaceful Asia-Pacific region. *Asia Pacific Education Review, 9*(3), 344-354.

Morris, P. (2009). *The Bakhtin reader: Selected writings of Bakhtin, Medvedev, Voloshinov*. Bloomsbury Academic.

Reardon, Betty. (2000). Peace education: A review and projection. In B. Moon, S. Brown, & M. Peretz (Eds.), *International companion to education* (pp. 397–425). New York: Routlege.

Seo, S. (2013). Hallidayean transitivity analysis: The Battle for Tripoli in the contrasting headlines of two national newspapers. *Discourse & Society, 24*(6), 774-791.

Sun, L. (2017). Critical encounters in a middle school English language arts classroom: Using graphic novels to teach critical thinking and reading for peace education. *Multicultural Education, 25*(1), 22-28.

Tokyo Shoseki. (2021). *New horizon: English course 3*.

Tulgar, A. T. (2018). Student views on the maintenance of peace education in glocal second language setting. *Journal of Language and Linguistic Studies, 14*(4), 150-161.

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Professional Development of Teachers:
Comparison of Czech and Russian Educational Systems

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Abstract

Being a part of a larger research, this study focuses on the Czech and Russian educational systems in terms of Continuous Professional Development (CPD). It is a secondary data analysis which draws a comparison between Czech and Russian teachers and puts an enlarged interpretation of the results on lower-secondary school teachers' CPD from the OCED's Teaching and learning International Survey (TALIS 2018). The aim of this analysis is to provide and compare general information on CPD in terms of its content, form, impact on teaching practices and to review what types of CPD are crucial for Czech and Russian teachers in order to promote, sustain teachers' CPD and keep them up to date. The research also seeks to uncover the better CPD system of the two and promote dissemination to the less well-performing one. In order to achieve the analysis objectives, the quantitative methods were employed. The study of CPD has identified both differences and similarities between the two countries. The analysis has revealed that countries don't differ much in terms of types of CPD undertaken and participation rates are consistently high across the such activities as courses and seminars, reading professional literature and peer observation. The countries vary significantly with respect to online courses, participation in networks and observation visits to other schools (about 70% in Russia and 20% in the Czech Republic). However, teachers need to be encouraged to take ownership of their professional development and consider it as a personal responsibility rather than a professional obligation.

Keywords: Teacher Continuous Professional Development, In-Service Training, Teacher Professionalism

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Introduction

This secondary data analysis is a part of a larger research which focuses on the Czech and Russian educational systems in terms of Continuous Professional Development (CPD) of the lower-secondary school teachers in public sector. According to ISCED (International Standard Classification of Education) it covers the following grades: from 6 to 9 in the Czech Republic and from 5 to 9 in Russia. The report draws a comparison between Czech and Russian teachers and puts an enlarged interpretation of the results on lower-secondary school teachers' professional development and teachers' experiences from the OCED's Teaching and learning International Survey 2018 (TALIS 2018). Though a comparative analyses of teacher development can be done in many ways (Spilková, 2002), in the TALIS survey the following aspects of teachers' CPD have been represented: induction programmes and mentoring activities; types and content of CPD; overall support for teachers' participation in CPD; perceived impact of CPD on teaching practices; experienced needs and barriers for CPD.

The Czech Republic and Russia have been selected for comparison for quite a number of reasons. Firstly, the need for a more highly educated work force is stimulating policy-makers in both countries to expand access to schooling and enhance its quality. The countries strive to improve educational standards to comply with the worldwide quality. In both countries the governments have enacted policies that require teachers and school leaders have opportunities to update not only their pedagogical content knowledge but social pedagogical knowledge as well (Shulman, 1987). The choice of the Czech Republic and Russia for the analysis is based on the comparative research of the two countries because the comparative study in education allows one to see various practices and procedures in a wider context that helps to throw light on them, examining alternatives to the normal practice (Phillips, 2000). Another noteworthy reason is that the comparative analysis of the Czech Republic and Russia highlights the similarities and explains the differences in the educational systems in the light of the national contexts which are influenced by the historical development of a country, its political system and legislation (Úrbanek, 2005; Greger, Walterová, 2007). Despite continuing differences among the schooling systems, the emerging global economy virtually demands that nations now address similar educational issues. Thus, this acknowledgment may help to establish if these distinguishing characteristics reflect on the Continuous Professional Development and effect its' features.

Therefore, the aim of this analysis is to provide and compare general information on CPD as perceived by lower-secondary school teachers in the Czech Republic and Russia in terms of its content, form, impact on teaching practices and to review what types of CPD are crucial for teachers in order to promote, sustain teachers' CPD and keep them up to date as "teachers are called upon not only to acquire new knowledge and skills but also to develop them continuously" (Teachers' professional development 2010:12). The secondary data are like a "compass" which guides the study (Hesse-Biber, 2010). In order to carry out an in-depth secondary data analysis only the questions from 19 to 28 of a Teacher Questionnaire were addressed (Teacher Questionnaire pp.11-15) as they focus on professional development received by lower-secondary school teachers. The following questions help to address these research objectives:

1.　　　What induction programmes and mentoring activities were available to lower secondary school teachers?
2.　　　What CPD was undertaken by teachers in the year prior to the TALIS 2018 survey?

3.   What support did schools provide teachers undertaking CPD activities?
4.   What were the characteristics of CPD activities that teachers felt had the greatest positive impact upon their practices?
5.   What CPD did teachers say that they need?
6.   What did teachers perceive to be the greatest barriers to receiving more CPD?

Drawing upon the outcomes of the study, the researcher intends to propose a theoretical model of effective professional development of lower secondary school teachers so that teachers are able to capitalize on the experience and the theoretical framework provided by this study. The research also contributes to a better theoretical understanding of CPD in the Czech context.

TALIS 2018: context, goals and methodology

The topic of CPD: has become an area of growing interest internationally and there is an increasing body of research focused on various aspects of teachers' professional development (Avalos, 2011; Kennedy, 2005) and how the nature of CPD has changed and developed over the past few decades. TALIS defines CPD as "activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher" (OECD, 2009, p. 49). Professional development can be defined broadly as "the body of systematic activities to prepare teachers for their job, including initial training, induction courses, in-service training, and continuous professional development within school settings" (Teachers' professional development, 2010:19). Other definitions, such as that offered by Day (1997), interpret the nature and purpose of CPD much more widely and adds emphasis on the role of teachers in development of educational policy for which they need special knowledge and professional thinking. With due regard to different aspects of CPD, TALIS 2018 covers all the themes in questionnaires which project teachers' perspectives and experiences in full and provide insight into the reality of CPD in schools.

Being a part of a larger research, this secondary data analysis of TALIS 2018 dataset focuses on Professional Development of lower-secondary school teachers only (questions 19-28). The work with the following variables is carried out and the researcher matches them to teachers in the Czech Republic and Russia: kinds of professional development activities teachers participate in (courses, peer-observation, reading professional literature) and its impact on their teaching; the extent to which teachers currently need professional development (student assessment practices, teaching students with special needs, for example) and barriers to teachers' participation in professional development. The TALIS secondary data is high-quality data as "the sampling procedures have been rigorous" and "it is the first major international survey of teachers and school leaders, allowing them to provide input the educational policy analysis and development in key areas" (OECD (2018c). The survey was initiated and managed by the OECD. The survey was organized and conducted in three phases: (1) the pilot phase, the purpose of which was to develop and trial the content of the survey questions with a small number of TALIS participants; (2) the field trial phase, designed to test and evaluate the questionnaires and item formats as well as the survey procedures and data collection modes; and (3) the main survey phase.

TALIS 2018 applied online data collection method for achieving the goals of the survey of monitoring and comparing education systems in terms of the conditions of teaching and learning. Information is gathered via self-administered online questionnaires (main data collection mode) and paper questionnaires (substitute or fall-back mode) for use by teachers

and principals who were either not willing or not able to use the online delivery instruments. To ensure that the samples are not biased by non-response, TALIS 2018 required a minimum overall participation rate of 75% of teachers for each participating education system with a minimum response rate of 75% of sampled schools and each included school attaining a minimum response rate of 50%. (OCED 2018 Framework). Though there has been some recent criticism of a sample survey approach in the literature (Gorard, 2016), "statistical models that account for the inherent multilevel (system, school, teacher) structure of the TALIS data provide a useful means of understanding and explaining differences within and across schools and within and across countries" (0CED 2018:16 Framework). In large surveys such as TALIS, sampling variation is relatively small.

This cross-country survey allows the Czech Republic and Russia among other 46 countries that participated in the 2018 TALIS "to identify other countries facing similar challenges and to learn from other policy approaches" (Teacher Questionnaire 2018:2). Main data collection windows were composed of three-month period toward the end of the 2017/18 school year. TALIS 2018 was conducted in the Czech Republic in March-April 2018 and in March-June 2018 in Russia respectively. Table 1 reflects that the survey collected information from 219 schools and 3,447 lower-secondary school teachers in the Czech Republic, an average of just over 15 teachers for each school in the sample. The survey yields a final sample of 230 schools and the total number of lower-secondary school teachers as 4,011, reflecting the greater number of teachers within lower-secondary schools in the Russian Federation. This reflects weighted school-response rates of 100% and weighted teacher-response rates of 93,8% in the Czech Republic and 100% and 99,9% in Russia accordingly. These response rates are very good by the standards of TALIS 2018.

Table 1: Weighted participation rates and number of schools and lower-secondary school teachers' participating in the Czech Republic and Russia in TALIS 2018 (OECD 2018 Technical Report pp.185-186)

Education System	Estimated size of teacher participation	Weighted school participation before replacement (%)	Weighted school participation after replacement (%)	Number of participating schools	Number of participating teachers	Teachers' participation in participating schools (%)
The Czech Republic	42,348	100	100	219	3,447	93,8
Russia	646,405	98,7	100	230	4,011	99,9

Methods of secondary data analysis on the Czech Republic and Russia

All the data were derived from the TALIS 2018 teacher questionnaire but only questions 19-28 devoted to CPD of lower-secondary school teachers were incorporated in the study. In analysing these data, it was essential to assess how respondents evaluate the professional development activities undertaken, the role professional development plays in enhancing the quality of teaching and barriers to receiving professional development. Every question contributes towards the overall aim of the research – to compare the CPD in both countries and consider its wider implications. Access to TALIS 2018 teacher questionnaire is unproblematic as the data are available in the OECD domain and exists outside of the research project.

In order to achieve the analysis objectives, the quantitative methods were employed. Creswell and Piano Clark (2007) recognise the preparation of data as an initial stage in converting raw data into a form useful for data analysis. In this analysis it means measuring the questionnaires by assigning numbers to responses. Burns and Burns (2008:96) define measurement as 'the process through which observations are translated into numbers". As it is a secondary data analysis, "it offers the prospect of having access to good-quality data for a tiny fraction of the resources involved in carrying out a data-collection exercise yourself" (Bryman 2012:312). Thus, the first stage was accessing and downloading the survey results. As "tables are commonly used in quantitative analysis, where they are usually called cross-tabulations and contain counts or percentages in the cells" and "they are convenient when making comparisons of different subgroups of the dataset" (Gibbs 2007:78), the comparisons using Microsoft Excel were made and after that, explanations were produced. In order to perform high-quality data analysis and ensure the best results, a computer software package that supports the management of quantitative data: International Business Machines Statistical Packages for the Social Sciences (IBM SPSS), the International Database (IDB) Analyzer and EXCEL software was used. The International Association for the Evaluation of Educational Achievement (IEA) Data Processing and Research Centre (IEA DPRC) developed the International Database (IDB) Analyzer software, specifically for the purpose of analyzing international datasets, such as TALIS. In conjunction with SPSS, the IDB Analyzer generates SPSS syntax that allows for taking the sampling design into account in the computation of statistics and standard errors (Strizek et al. 2014). Crossley and Watson (2003), claim that bias is common with comparative studies, given that we are all conditioned by our upbringing, culture, educational background and socio- political values and attitudes. Therefore, caution was taken to avoid or minimize such tendencies by eliminating any preconceived notions, prejudiced impressions or information about the schools and teachers.

Interpretation of findings

1.Induction and mentoring programmes and activities.

Induction and mentoring programmes considered to be "another important type of support for teachers' development which takes the form of policies and practices to support teachers who are either new to the profession or new to the school" (Teachers' Professional Development 2010:77). Chart 1. provides the extent to which formal and informal induction programmes and activities are common among lower-secondary school teachers in the Czech Republic and Russia during their first employment as a teacher. The reports of the teachers indicate that only 31,1% of teachers in the Czech Republic and 29,4% of teachers in Russia participated in formal induction programmes during their first employment as a teacher. The participation rate is also very low in informal induction programmes: 29,7% and 26,6% respectively. Thus, fewer than half of teachers had access to formal and informal induction programmes during their first employment. These figures are remarkably low and provide a negative sign that the Czech Republic and Russia are not the leaders in induction provision for new teachers either during their first employment or at their current schools.

Mentoring activities are considered to be a part of a formal arrangement. TALIS defines mentoring as a support structure in schools where more-experienced teachers support less-experienced teachers (Teachers' Professional Development 2010). The following picture emerges for mentoring practices lower-secondary school teachers in the Czech Republic and Russia participated in: mentoring was reportedly experienced by 11,4 per cent of Russian teachers as part of their formal arrangement against lower participation rate as only 7,1 per

cent among Czech teachers. Though chart 2 indicates that the proportion of novice teachers being mentored in Russia was higher than in the Czech Republic, mentoring was not a commonly reported activity in both countries.
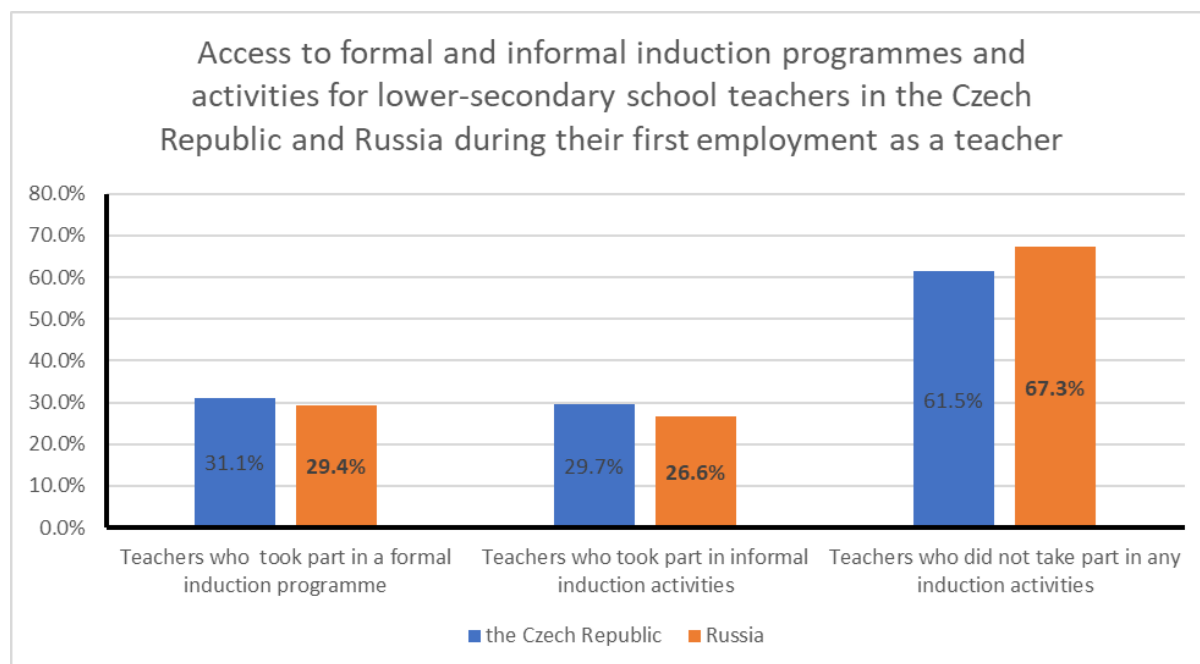

Chart 1. Q19-1) Access to formal and informal induction programmes and activities of lower-secondary school teachers in the Czech Republic and Russia
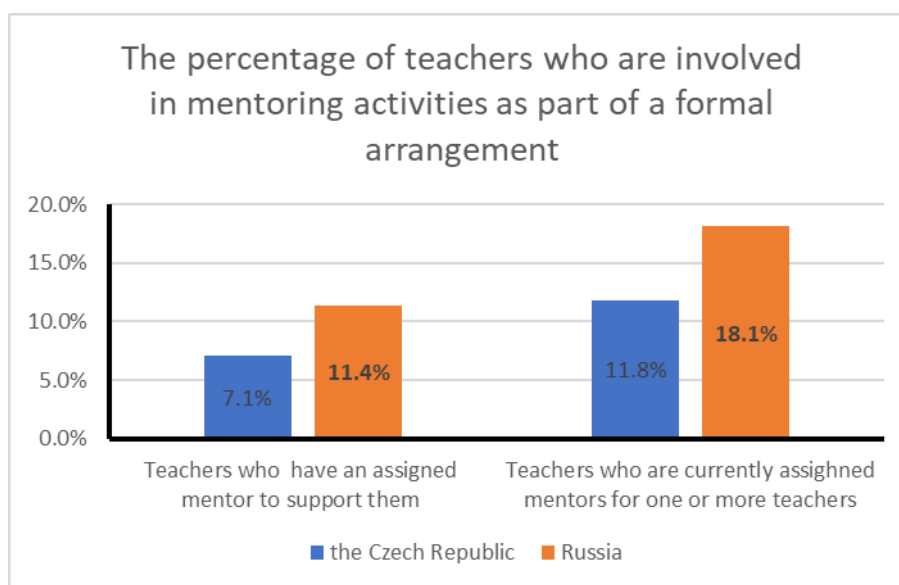during their first regular employment as a teacher.

Chart 2. (Q21) The percentage of teachers who are involved in mentoring activities
as part of a formal arrangement

2. Types and content of Continuous Professional Development

TALIS 2018 asked teachers about a wide range of activities, from more organised and structured to more informal and self-directed learning as well as the content of CPD that Czech and Russian lower-secondary school teachers participated in during the last 12 months

prior to the survey. The teachers in both countries stated that they regularly participate in different kinds of activities. The amount of professional development undertaken by lower-secondary school teachers is much the same in terms of courses/seminars and reading professional literature. The highest reported participation was in "reading professional literature" 86,4% in the Czech Republic and 91,2% in Russia. Attendance at courses/seminars attended in person was the next popular means of experiencing professional development activities, with 83,7% of Czech teachers and 75,1% of Russian teachers. Chart 3 makes it evident that participation rates are fairly consistently high across most types of activities in Russia in comparison to the Czech Republic. It indicates the large differences between the participation in online courses and seminars as 69,3% in Russia and 24,4% in the Czech Republic as well as "education conferences where teachers present their research or discuss education issues" – 69,9% in Russia and 27,5% in the Czech Republic respectively. The largest differences are found in some aspects of observation visits to other schools 71,1% among Russian teachers compared to 19,1% of Czech teachers. The countries vary significantly with respect to participation in a "network of teachers formed specifically for their professional development" – 65,5% of teachers in Russia reported taking part in them and only 23,6% of teachers in the Czech Republic.

The analysis shows that teachers in the surveyed countries give similar priority to the content of professional development. Chart 4 provides a comparison of different content of professional development reported by teachers. A great percentage of lower-secondary teachers took part in "knowledge and understanding of the subject field" 89% of Russian teachers versus 71% of Czech teachers.

Specifically, a significant minority were not interested in professional development activities devoted to "school management and administration", "teaching in a multicultural and multilingual setting" and "communicating with people from different cultures or countries" just 24-27% of Russian teachers and 11-14,6% of Czech teachers.

In general, an average per cent of teachers in lower secondary education report engaging in professional development over the past year including different types of content. However, there is enormous variation among countries.
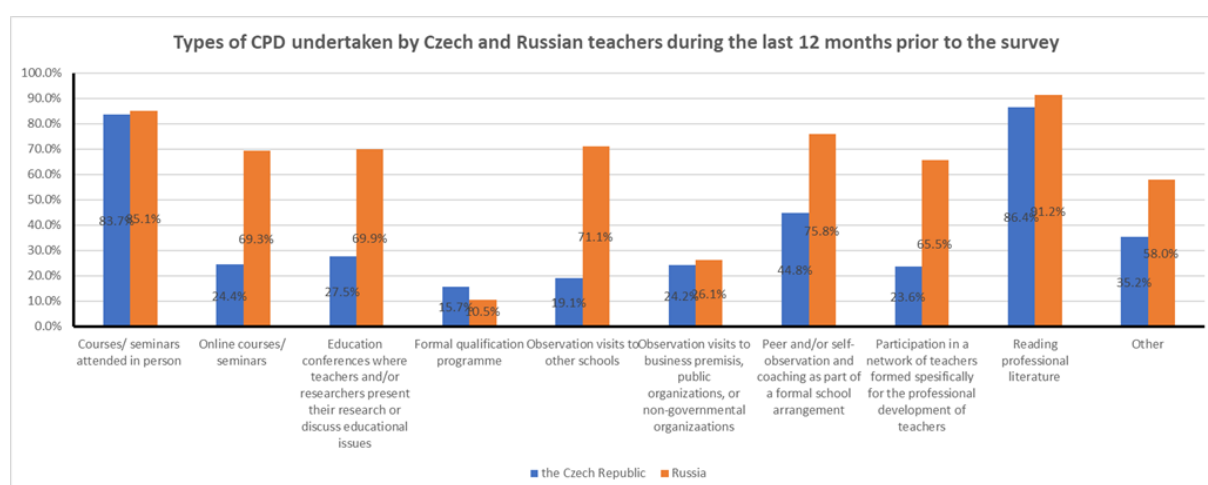

Chart 3. (Q22) Types of CPD undertaken by Czech and Russian teachers
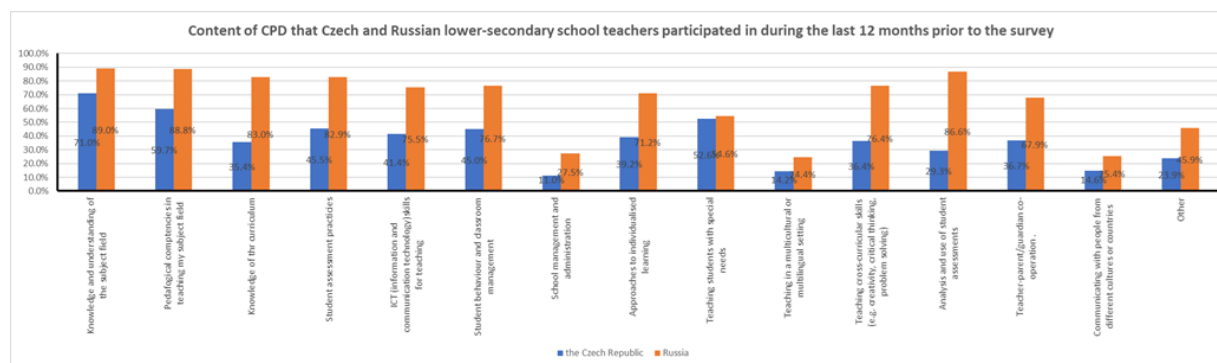during 12 months prior to the survey

Chart 4. (Q23) Content of CPD that Czech and Russian lower-secondary school teachers participated in during the last 12 months prior to the survey

3. Overall support for teachers' participation in Professional Development

Table 5 shows that support for professional development can take a variety of forms. TALIS distinguishes "between financial support – direct payment of the costs of the development activities or salary supplements for undertaking development – and support in the form of time scheduled to allow for development activities" (Teachers' Professional Development 2010:74). The analysis reveals that reduced teaching load was the most commonly used form of support with 64,2% of Czech teachers and 57,4% of Russian teachers who reported receiving release from teaching duties to complete CPD. Provision of materials was the next most frequently offered support accessed by around 47,7% of teachers in both countries. Non-monetary support for teacher development is mostly provided through scheduled time for activities that take place during regular working hours at the school, days off, classroom resources, software, apps, book vouchers and promotion opportunities. As reported by Czech teachers, it was a significant mean of support for Czech teachers – 40,0% drew "not-monetary support for activities outside working hours" but this was not the case among Russian teachers. Only 26,7% of Russian lower-secondary school teachers reported that they commanded this form of support with recompense in the form of days off or reduced teaching load.

Though professional development activities are not normally linked to a salary increase, 39,9% of Czech teachers reported advancement on the salary scale compared to Russian teachers who were slightly below the Czech Republic in terms of percentage of teachers who said their salary had increased as a result of their CPD. The figures show that direct increase salaries and monetary supplements are fewer common means of professional development support in both countries.

The analysis shows that professional development is not completely free for many teachers. It gives some cause for concern especially for Russian policy makers as Russia displays a considerably low level of monetary support. About 70% of Russian teachers who were engaged in some professional development reported that they made financial contribution in recognised professional development programmes. The situation is better in the Czech Republic where only half of the teachers reported that they did not self-fund the professional development activities they undertook.
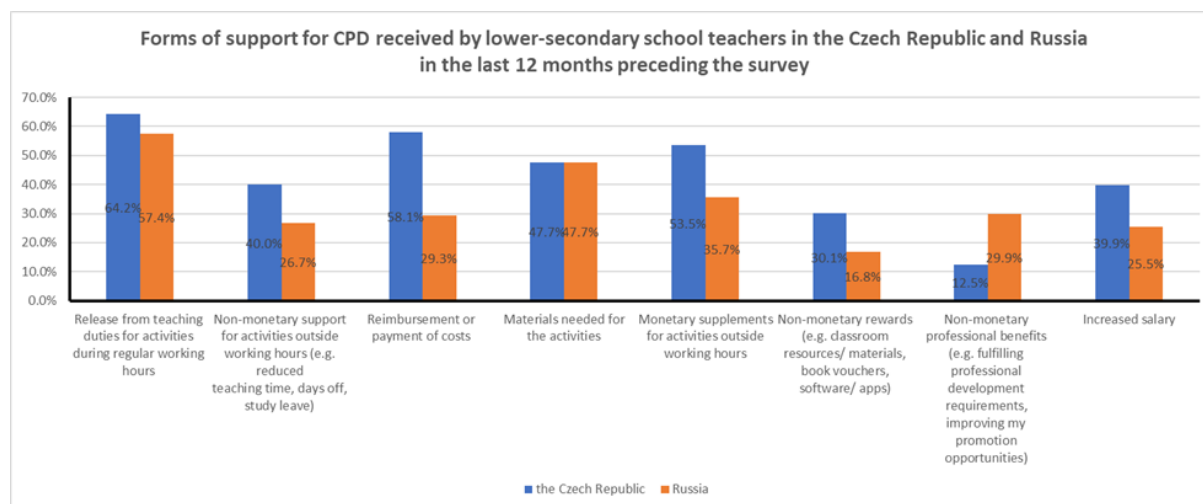
Chart 5. (Q24) Forms of support for CPD received by lower-secondary school teachers in the Czech Republic and Russia in the last 12 months preceding the survey.

4. Effectiveness of Professional Development – teachers' perceptions.

For TALIS, the effectiveness of professional development is based on teacher self-reported perception. As chart 6 describes, on average 87,6% of surveyed lower-secondary school teachers in Russia and 78,4% of Czech teachers reported positive impact on their teaching practices.

Teachers were asked to nominate the characteristics of CPD that contributed to its effectiveness (Chart 7). Most teachers reported a significant positive impact on their teaching of their prior knowledge 95,0% of Russian teachers and 86,8% of Czech teachers accordingly. According to 85,4% of Czech teachers and 71,1% of Russian teachers the most effective forms of professional development were those having coherent structure and provided opportunities to practise (with 83,7% in Russia versus 73,0% in the Czech Republic). The area of great interests to teachers are programmes "provided follow-up activities". Thus, 80,0% of Russian teachers and 67,7% of Czech teachers reported a high and moderate impact of them on their teaching practices. Extended professional development activities are viewed by teachers as one of the less effective types of activities with 30,2% of Russian teachers and 23,4% of Czech teachers. There is a notable contrast between the teachers' opinion on "opportunities for collaborative learning". They are found particularly effective by teachers in Russia (80,0%) while teachers in the Czech Republic take a far less positive view on them (29,9%).
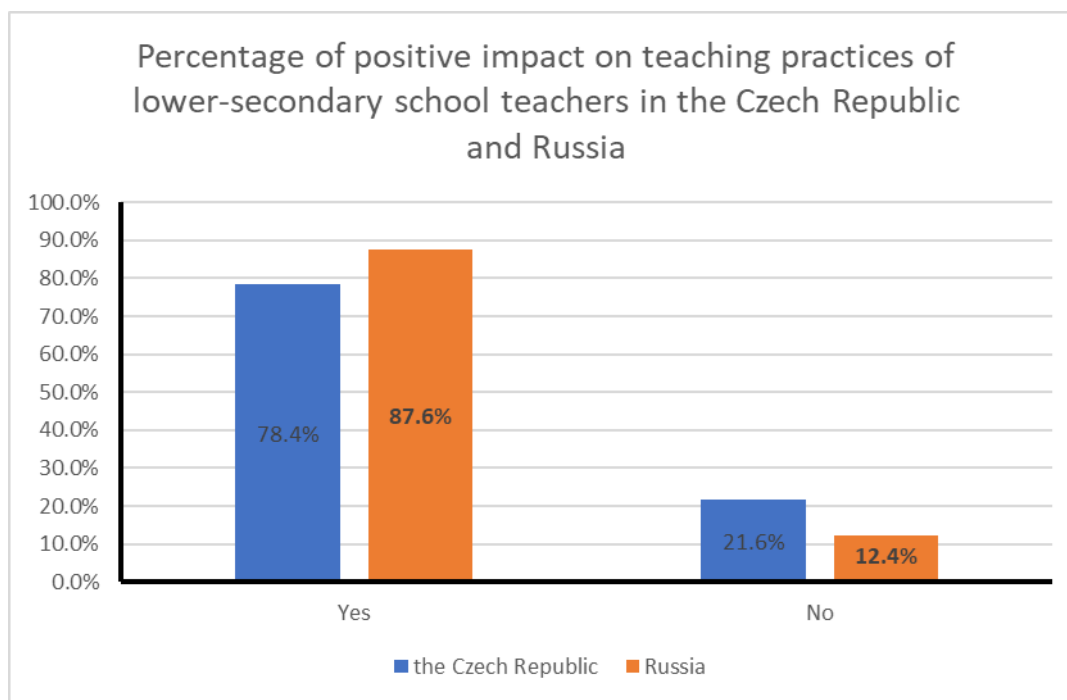
Chart 6 (Q25). Percentage of positive impact on teaching practices of
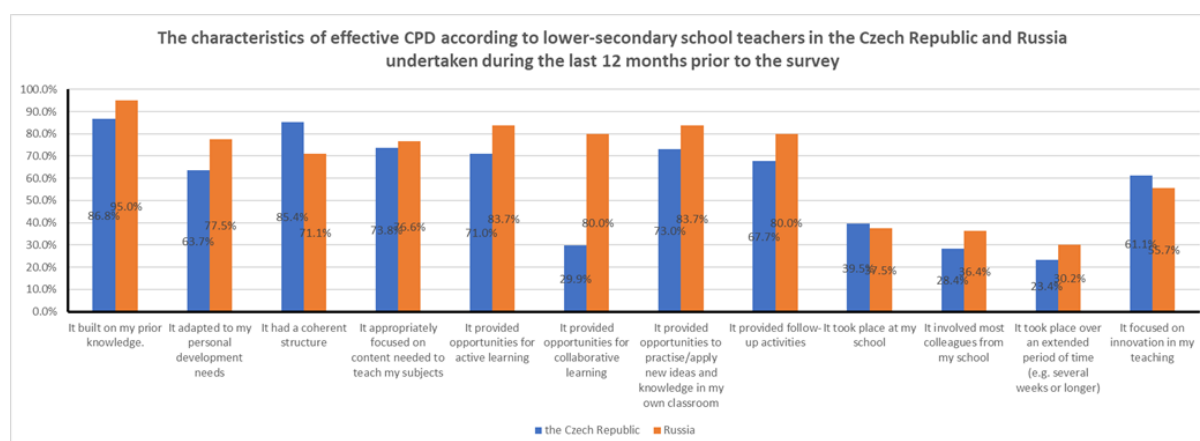lower-secondary school teachers in the Czech Republic and Russia

Chart 7 (Q26). The characteristics of effective CPD according to
lower-secondary school teachers in the Czech Republic and Russia
undertaken during the last 12 months prior to the survey

5. Teachers' needs for Professional Development

Chart 8 shows the extent to which lower-secondary school teachers in the Czech Republic
and Russia report a high level of CPD needs. The data send the important message that vast
majority of teachers in both countries don't want more professional development that they
had received. The area which is rated most frequently overall as a high-level need across two
countries is "student behaviour and classroom management" with 16,7% of Czech teachers
and 13,6% of Russian teachers. There are some patterns across countries which differ
sharply. Thus, sizeable proportions of Russian teachers reported having a high level of
development need for "pedagogical competencies in teaching their subject fields",
"knowledge of the curriculum" and "student assessment practices" – 15,5%, 14,5% and
14,2% respectively. Conversely, Czech teachers feel much less need for this professional

development activities with only 7,2%, 3,3% and 6,5% of teachers. Czech teachers' need for these professional development activities is about 10 percentage points less in comparison to Russian teachers. We can conclude that lower-secondar school teachers' need is rather low in all areas of their work but mostly notably in "school management and administration". The analysis indicates that the greatest degree of need for development when aggregated across all the areas was reported by teachers in "student behaviour and classroom management" and "students with special need". Across all of these areas, teachers in the Czech Republic were less likely to report a high need for additional CPD than teachers in Russia.
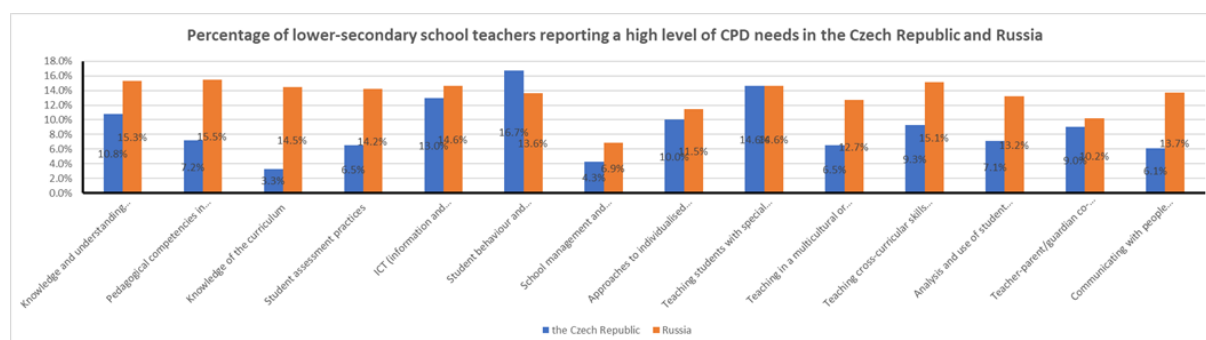

Chart 8 (Q27) Percentage of lower-secondary school teachers reporting
a high level of CPD needs in the Czech Republic and Russia

Conclusion

The analysis revealed that:

1.Thus, fewer than half of teachers in the Czech Republic and Russia had access to formal and informal induction programmes during their first employment. Although formal and informal induction is relatively rarely provided for new teachers during their first employment, the Czech Republic presented a higher percentage of teachers who participated in induction programmes at their current school. This remarkably low figures for both countries provide a negative sign that the Czech Republic and Russia are not the leaders in induction provision for new teachers either during their first employment or at their current schools. It might lead to a conclusion that induction programmes are offered at the discretion of the school. Though the proportion of novice teacher being mentored in Russia was higher than in the Czech Republic, mentoring was not a commonly reported activity in both countries.

2.The teachers in both countries stated that they regularly participate in different kinds of activities. The analysis reveals that the amount of professional development undertaken by lower-secondary school teachers is much the same in terms of courses/seminars and reading professional literature. Attendance at courses/seminars attended in person was the next popular means of experiencing professional development activities. In general, an average per cent of teachers in lower secondary education report engaging in professional development over the past year including different types of content. However, there is enormous variation among countries. Teachers in the surveyed countries give different priorities to the content of professional development.

3.The analysis shows that teachers in both countries receive both monetary and non-monetary support for their continuing professional development. There are certain differences among the countries in terms of the amount of received support but the analysis reveals that reduced

teaching load was the most commonly used form of support. We can conclude that the professional development is not completely free for many teachers. It gives some cause for concern especially for Russian policy makers as Russia displays a considerably low level of monetary support. About 70% of Russian teachers who were engaged in some professional development reported that they made financial contribution in recognised professional development programmes. The significant point is that the situation is better in the Czech Republic where only half of the teachers reported that they did not self-fund the professional development activities they undertook.

4.Teachers were broadly positive about the effectiveness of professional development on their teaching practices. Among the nominated characteristics of CPD that contributed to its effectiveness, most teachers reported a significant positive impact on their teaching of their prior knowledge. Extended professional development activities are viewed by both Czech and Russian teachers as one of the less effective types of professional development activities.

5.The remarkable finding was that vast majority of teachers in both countries don't want more professional development that they had received. In spite of this face, the choice of continuing professional development programmes may depend on a training plan established to meet the educational priorities of the teachers. It has been concluded that lower-secondar school teachers' need for professional development is rather low in all areas of their work but mostly notably in "school management and administration".

6.There are many barriers that constrain the professional development of teachers. The most commonly cited reasons for teachers not undertaking more professional development than they had done were very similar in both countries. One of the most frequently cited barriers according to teachers' reports was "conflict with work schedule" and the second prominent barrier was that teachers do not have time because of family responsibilities.

References

Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27, 10-20.

Bryman, A., (2012). *Social Research Methods, 4th edition.* Oxford   University Press

Burns, R.B. & Burns, R.A., (2008). *Business research and methods and statistics using SPSS.* London. Sage Publications.

Cresswell, J.W. & Piano Clark, V.L., (2007). *Designing and conducting mixed methods research*. London: Sage Publications Ltd.

Crossley, M., & Watson, K., (2003). *Comparative and International Research in Education: Globalisation, Context, and Difference*. London: Routledge Falmer

Day, C., (1997). In-service teacher education in Europe: conditions and themes for development in the 21st century. Journal of In-service *Education*, 23(1): 39–54.

Gibs, R.G., (2007). *Analyzing qualitative data.* SAGE Publications

Gorard, S., (2016). *Damaging Real Lives Through Obstinacy: Re-Emphasizing Why Significance Testing is Wrong*. Sociological Research Online, 21(1), 2

Greger, D., Walterová, E. (2007). In pursuit of educational change: the transformation of education in the Czech Republic. *ORBIS SCHOLAE* 1 (2), 11-54. Charles University in Prague, Faculty of Education.

Hesse-Biber, S.N. (2010). Mixed methods research: Merging theory with practice. *New York: Guilford Press.*

Kennedy, A. (2005). Models of Continuing Professional Development: a framework for analysis. *Journal of In-service Education*, 31(2).

OECD (2009). *Creating Effective Teaching and Learning Environments: First results from TALIS*. Paris: OECD.

OECD. (2018). *Teacher Questionnaire*. Main Survey Version.

OCED (2018). *Teaching and Learning International Survey (TALIS) 2018 Conceptual Framework.* OECD Education Working Paper No. 187

OECD. (2018c). *A Teacher Guide to TALIS*. (Teaching and Learning International Survey).

OECD (2018). *TALIS 2018 Technical Report*. Paris: Author.

Phillips, D. (2000). Learning from Elsewhere in Education: some perennial problems revisited with reference to British interest in Germany. Comparative Education, 36(3), 297-307.

Shulman, L. S. (1987). Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review*, 57(1), 1 – 21.

Spilková, V. (2002) Současné proměny vzdělávání učitelů v zemích Evropské unie. *Pedagogická orientace* 2, 44-54.

Strizek, G.A., Tourkin, S., Erberber, E., & Gonzales, P., (2014). Teaching and Learning International Survey (TALIS) 2013: U.S. technical report (NCES 2015-010). National Centre for Education Statistics. https://nces.ed.gov/pubs2015/2015010.pdf.

Teacher Questionnaire (2018). Organisation for Economic Co-operation and Development (OECD). Teaching and Learning International Survey (TALIS).

Teachers' professional development (2010). Europe in international comparison. An analysis of teachers' professional development based on the OECD's Teaching and Learning International Survey (TALIS). *Luxembourg: Office for Official Publications of the European Union.*

Urbánek, P. (2005). *Vybrané problémy učitelské profese: Aktuální analýza*. Liberec: Technická univerzita v Liberci, Fakulta pedagogická

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