

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

Vladimir Gutiérrez, Universidad César Vallejo, Peru

The Paris Conference on Education 2022  
Official Conference Proceedings

### **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

**iafor**

The International Academic Forum

[www.iafor.org](http://www.iafor.org)

## 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.*

<b>Week</b>	<b>Topic</b>	<b>Product</b>
First	<b>Physical description of the human head and face:</b> <ul style="list-style-type: none"> <li>Anatomical description of a face,</li> <li>Medical considerations about a face.</li> </ul>	A story designed in a comic about Cleft Lips patients before and after surgery.
Second	<b>Human cranium</b> <ul style="list-style-type: none"> <li>Main cranial bones.</li> </ul>	A story was designed through a comic about cranial fractures.
Third	<b>Human Brain and cranial pair nerves.</b> <ul style="list-style-type: none"> <li>Brain.</li> <li>Cerebellum</li> <li>Chewing function.</li> </ul>	A story about facial paralysis, and its effects on chewing.
Fourth	<b>Human mouth and teeth.</b> <ul style="list-style-type: none"> <li>Anatomy of the human mouth.</li> <li>Tooth and teeth.</li> <li>More common diseases in the mouth.</li> </ul>	A story about a patient with swollen wisdom teeth.
Fifth	<b>Dental consultation</b> <ul style="list-style-type: none"> <li>Common dentist questions.</li> <li>Common oral diseases in our country.</li> </ul>	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.*

	<b>Mean</b>	<b>N</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
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)
	Mean	Typical Deviation	Standard error	95% confidence range				
				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	-12,600	1,3025	,23781	-13,0863	-12.1136	---	29	,000
Post-test						-52,98		

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.*

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
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.*

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
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.*

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
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 strips 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 <sup>a</sup>	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

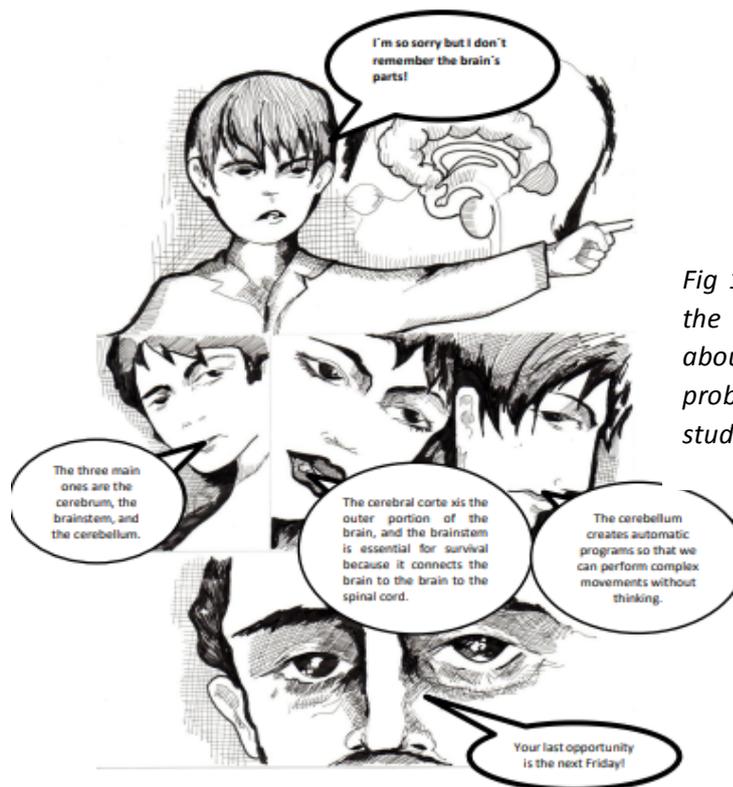


Fig 1. The main character was created by the author of this research, the story is about a dentist student who has some problems in understanding anatomy. Every student filled the bubbles, creating a story.

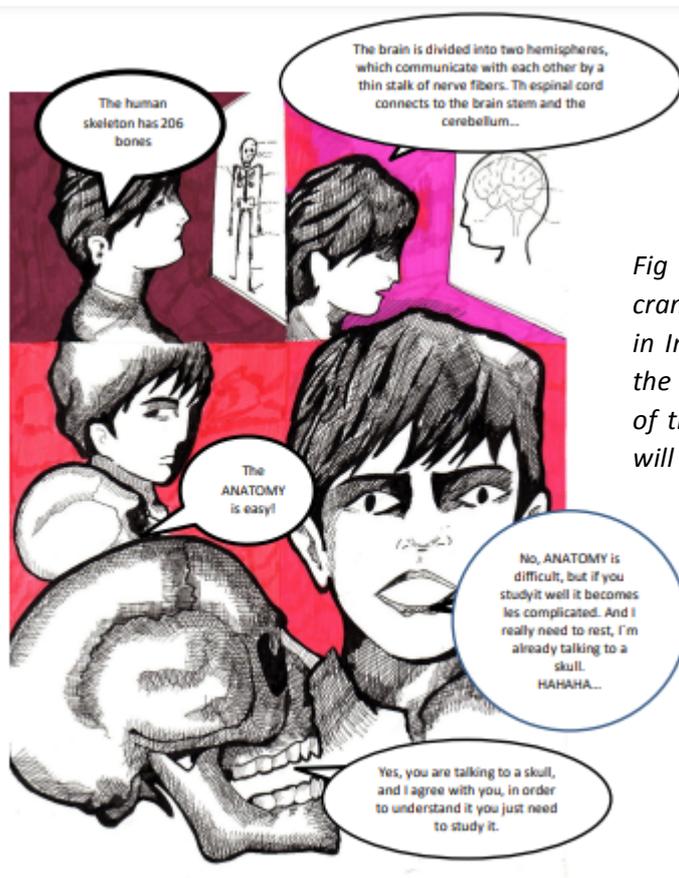


Fig 2. In the lab, he knows an old cranium belongs to Sancoyoc (a dentist in Inca's Empire), and they agree that the Sancoyoc will explain the anatomy of the head and neck and the student will explain new treatments.



Fig 3. The Sancyoc 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](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.

**Contact email:** [vgutierrezh@ucvvirtual.edu.pe](mailto:vgutierrezh@ucvvirtual.edu.pe)