Design Thinking and Creative Group Engagement in the EFL Classroom

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Abstract
Research has questioned the ability of our educational systems to prepare students for the increasingly uncertain and complex nature of the modern world. The need to rapidly predict trends, and find solutions to complex problems has increased the importance of empathy, creativity, cognitive flexibility and critical thinking in the workplace. In order to prepare students for the challenges they will face, fostering these 21st century skills should be essential goals for educators. In this presentation, the two authors looked at how these skills can be developed in the English as a Foreign Language (EFL) classroom through group-projects based on Design Thinking (DT). DT is an approach that focuses on designing solutions based on an empathetic understanding of end-users. In theory at least, DT courses provide dynamic activities that engage creative and critical thinking skills, and help students develop empathy and cognitive flexibility to help them succeed in the modern working environment. In order to critically analyse the potential for DT as a framework for structuring language lessons we described a DT-based EFL course in a Japanese university. The course consists of two types of lessons: 1) group activities and projects based on DT that stimulate student creativity; and, 2) an academic writing component using the creativity input as a basis for reflection and analysis. Attendees at the presentation left with theoretical insights into the impact of DT on student engagement and practical suggestions for implementing DT in language lessons.

Keywords: Design Thinking, creativity, English as a Foreign Language, Japanese universities

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Introduction

The authors, Tim (T) and Neil (N) shared teaching an eight-week university EFL class called 'Academic Topics and Tasks' from April to June 2018. Tim taught the class of 42 students in a two-hour lesson on Tuesday and Neil on a Friday. The goal of Tim's lessons was for the students to work in small teams to create a 'creativity test'. In order to make this test Tim taught them to go through the various stages of 'Design Thinking' (DT). Neil, on the other hand, taught academic writing to the students and used their experiences in the creativity lessons as a focus for the topics of two short academic reports (each were about 800 words in length). In order to work effectively together, Tim and Neil decided to make this joint course a research project and collected various kinds of data before, during and after the course was taught. Below are representative extracts from the kinds of conversations that they had during the making of the course and afterwards when they were analysing the data and working on the research project.

Creativity is a continuum

N: We have to share this course on academic topics and tasks. Do you have any particular focus?

T: I've been making materials based on DT and creativity for a while. Perhaps we could try them out?

N: Brilliant. Maybe you could do the DT and creativity materials on Tuesday and I could do the academic reflection bit on Friday? I know creativity is important in the workplace. There is a World Economic Forum report (2016) where senior business executives rank creativity in the top three qualities that workers need for knowledge-based economies. And I know it's important in education movements such as '21st Century Skills' (Kaufman, 2013) and 'Deep learning' (Fullan & Langworthy, 2014) where the so-called '4Cs' all include creativity as a key component. But I have been wondering why *you* are so keen on creativity.

T: Yes, all that is true but as well as the knowledge economy, the creative economy is growing rapidly as well. The global market for creative goods and services has increased substantially between 2002 and 2015, from $208 billion to $509 billion annually. Furthermore, the development of the creative economy has also been a driver for knowledge transfer and cultural inclusivity (UNCTAD, 2018).

N: OK I see. I guess it's not just creativity, but also other qualities such as empathy, cognitive flexibility and critical thinking that have become essential in the workplace (OECD, 2017; World Bank, 2019; World Economic Forum, 2016). So, as teachers we have to learn how to develop training programs that foster these qualities and help our students get on in life.

T: I think teaching about creativity can be an approach to teach all of these skills. Creative ideas can be practical like new manufacturing or building techniques; expressive, like poems or songs; or analytical, like scientific or literary theories. However, to be creative these contributions must be "new, surprising and valuable" (Boden, 2004) in some way. New and surprising emphasizes the originality of

construction and valuable highlights that the construction must be fit for purpose and valued by a relevant community.

N: But, communities will have different notions of valuable (Baer, 2018), right? For physicians and biologists, a new theory must not only be accurate but also generate replicable results. Whereas in cultural and artistic domains, a dynamic expression of an idea or emotion that is so individualistic it cannot be replicated may be considered creative.

T: Exactly! Although creativity conjures up images of gifted artists or groundbreaking scientific discoveries, it is better conceived as a continuum from everyday insights that solve local problems to those deeper insights that transform the way we all think and live (Amabile, 2018). That's why I like the 4Cs model of creativity that introduces the idea that learning insights and creativity are related (Beghetto & Kaufman, 2017).

N: That's based on a social constructivist model of learning (Vygotsky, 1978). Learning is a dynamic process of knowledge construction and new insights become creative acts in the mind of the learner.

T: Yes, that's 'mini-c' creativity. Mini-c highlights "novel and personally meaningful interpretation of experiences, actions and events" (Beghetto & Kaufman, 2017, p. 72) within the learning process. Mini-c is primarily important as a form of individual growth; however, if these insights are explored and developed, they can lead to 'little-c' creativity. Little-c creativity describes innovations in everyday life that solve localized problems and are considered new and valuable by a local community.

N: So, in an educational context, mini-c and little-c are useful ways to look at how students are learning and how that affects others in the classroom.

T: Yeah, I agree. 'Pro-c' creativity represents a developmental progression beyond little-c that requires professional-level knowledge. Pro-c contributions are valued by a community of experts and so have some wider impact.

N: So, if the research we do on linguistic development and creativity is read and influences the way other teachers and researchers work, then it would be an example of pro-c creativity.

T: I'm glad you're optimistic. But, even if we did reach pro-c creativity, we're still unlikely to reach the heights of 'Big-C' creativity which is when a body of work creates a new field of expertise, or transforms an existing one. Big-C is for the Einsteins, Picassos and Mozarts of this world.

N: But it's interesting that our project on creativity actually spans three different types of creativity from the mini-c of individual learning, to the little-c of group problem solving to, potentially, the pro-c impact of the research itself.

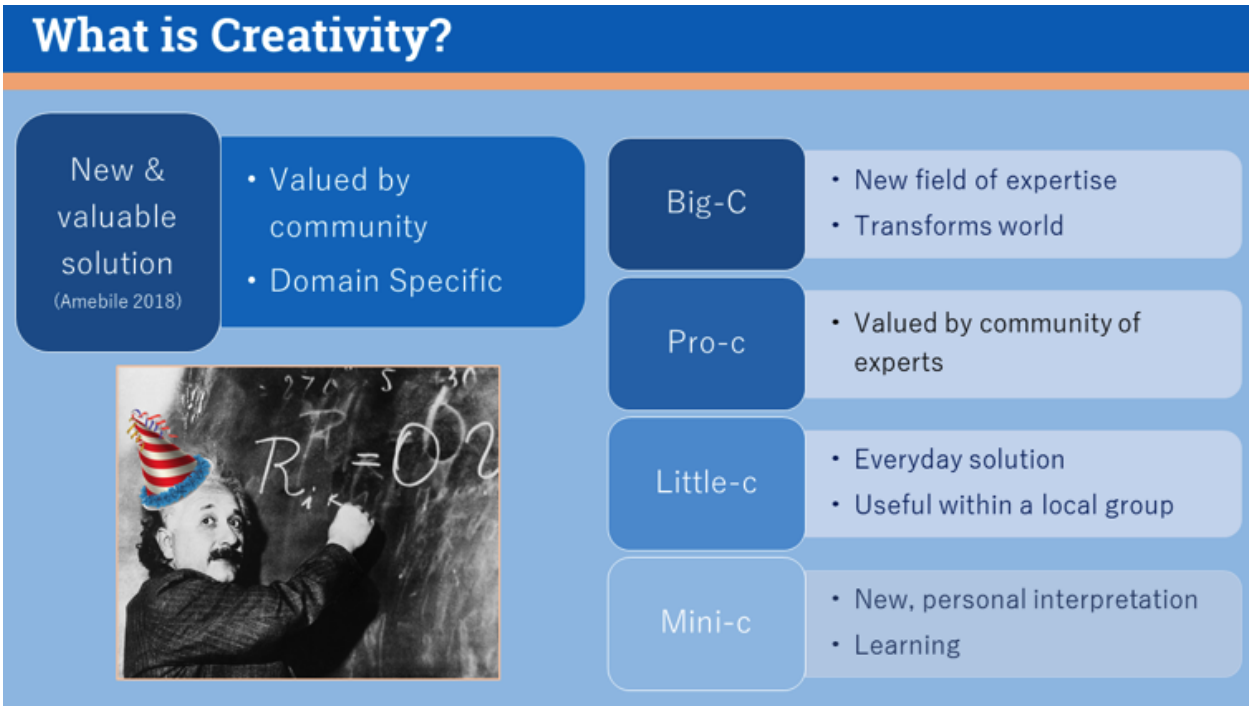


Figure 1. Types of creativity

T: I think one of the questions people might ask is, "What's creativity got to do with teaching language?" What do you think about this?

N: I believe creativity is a fundamental part of communication. We need social-emotional imagination (Gotlieb, Jahner, Immordino-Yang & Kaufman, 2016) to make sense of each other when we speak and bridge communication gaps (Chappell, 2016). We also use linguistic creativity to entertain each other and make information memorable (Tagg, 2013). For example, when we make puns and jokes, or we use original rhymes or abbreviations as mnemonic tools. So, creativity is a natural component of dialogue. However, creativity in EFL has generally been used artistically such as through drama activities (Dervishaj & Xhillari, 2009), language play (Cook, 2000), and students creating multilingual (Choi, 2016) and multimodal texts (Hafner, 2014).

T: Yeah, I think creativity is also about problem solving too, so project based learning (Beckett & Miller, 2006) involves a lot of creativity too. In our approach students use DT to create something new. So, they have to use language to engage and communicate, use some artistic skill to create something and apply critical thinking to make sure it's fit for purpose.

What is Design Thinking (DT)?

N: Can you tell me a little bit more about what DT is and how you introduce convergent and divergent approaches?

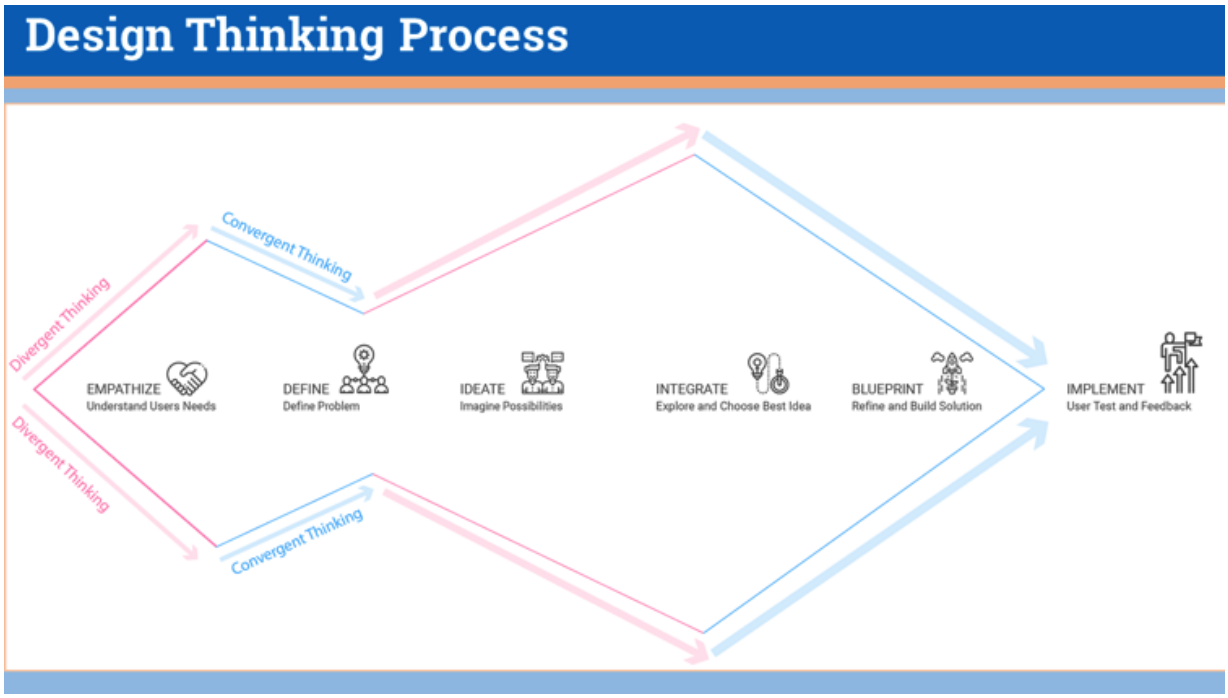


Figure 2. Design Thinking process

T: The key principle of DT is that if designers use empathy and deep listening to understand their clients before designing, they will make products the users will value and think are fit for purpose. So, designers define the problem with the users. Then they create lots of possible solution in the 'Ideation' phase. They then use logic and critical thinking to choose the most promising components in the 'Implementation' phase. After this they create blueprints and prototype solutions. They test those solutions, get feedback and start the whole process again if necessary. You can see that it is teaching how to make things that are new, surprising and valuable, as we mentioned before.

During the ideation phase, divergent thinking, or free-thinking imagination, is required to create lots of possible solutions to a problem. As we are aiming to create choice and explore new possibilities, it's important to encourage others, even if the ideas seem a little crazy at first. When we have a critical mass of ideas, we enter the 'Implementation' stage and it's time to evaluate the ideas and make something that's fit for purpose. Here we need to employ logic and discuss and clarify the potential benefits and risks that each solution creates. Divergent and convergent thinking require a different form of dialogic engagement, so they provide good opportunities to use different language skills.

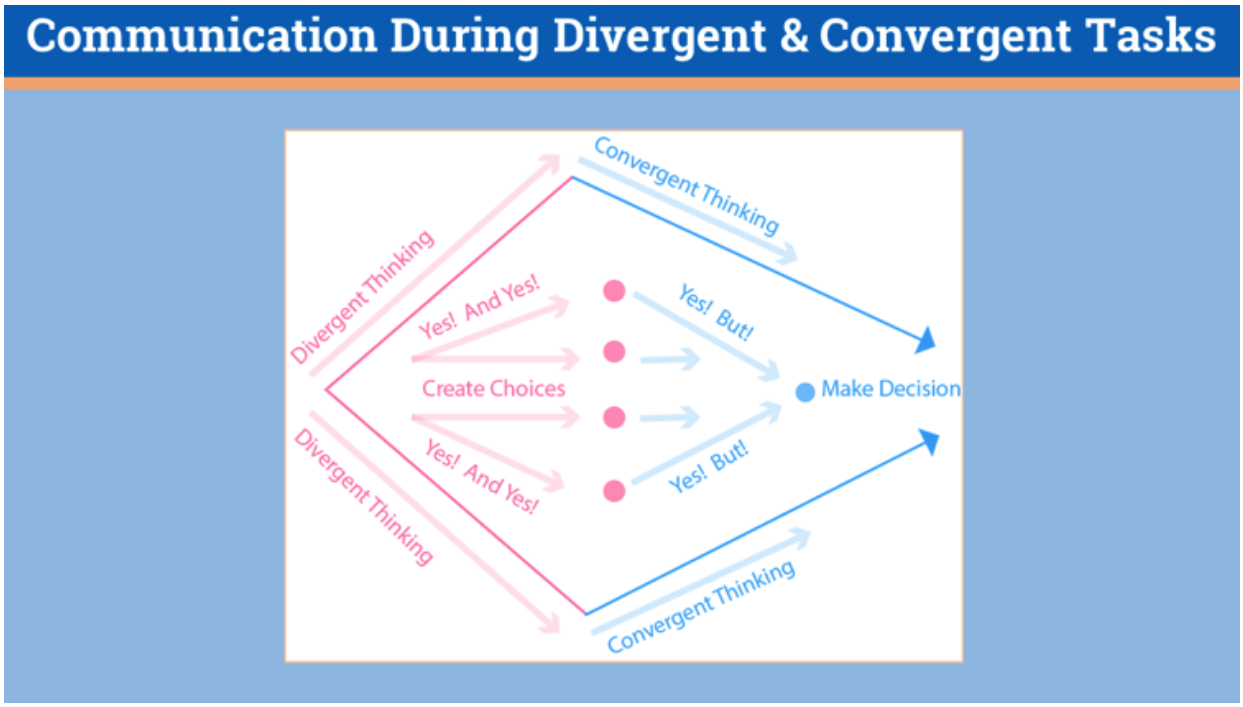


Figure 3. Modes of communication during Design Thinking

Our lessons

N: We can split our classes into two types: you teach the group activities, skills and communication techniques of DT; and I will use that as subject matter for reflective writing classes.

T: Sure. I try to create fun and engaging lessons that focus on developing awareness of diversity and understanding creativity and DT. I start by exploring personal learning and communication styles, and examining personal space. These activities soon show the natural diversity in the class. Then I start teaching about divergent and convergent thinking and the DT process.

N: I remember you telling me you had an activity about the Mona Lisa that helps develop divergent thinking skills. Can you explain it a little?

T: It's a drawing activity that the students seem to enjoy. I start by showing a photo of the Mona Lisa and say that we take it for granted. The image has become so ubiquitous, we recognise it instantly and think of it more like a fact than an artistic masterpiece. I tell the students we have forgotten to look closely but we need to do that and try to reimagine what the Mona Lisa could be. I show photos of Mona Lisa memes that make the students laugh, like a bodybuilding Mona Lisa, or Mona Lisa taking a selfie. Then I give the students a sheet of paper with pictures of the Mona Lisa on and ask them to reimagine and redraw the pictures. I make the Mona Lisa more and more minimal which allows students to be more and more creative with what they draw. And they come up with some entertaining and original designs.

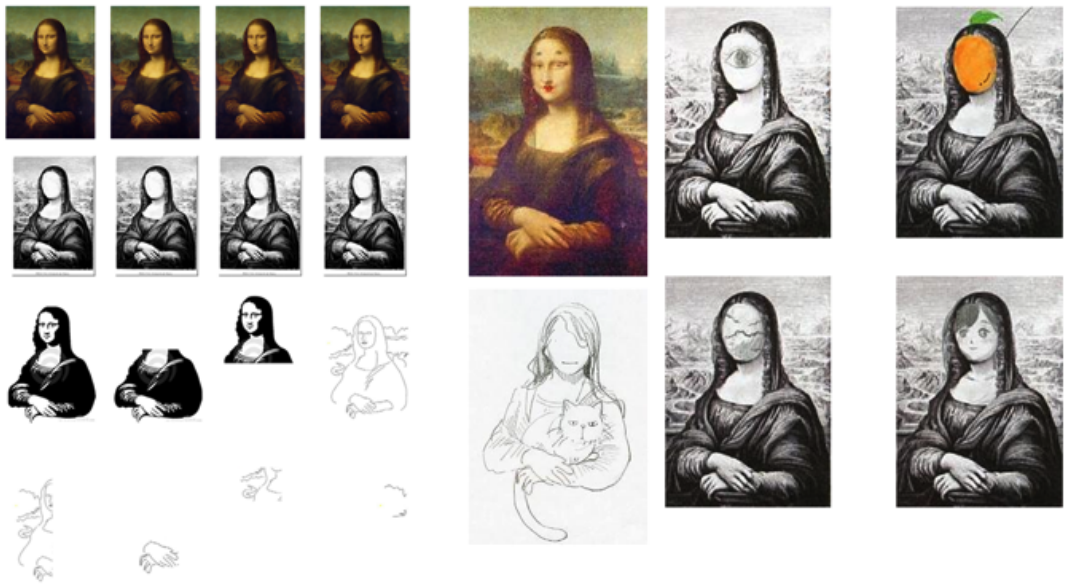


Figure 4. Students' Mona Lisa designs

N: I think these activities allow students to explore their imagination, to use a different media in the EFL classroom and make connections through humour. I think there's lots of mini-c creativity going on here, where students are learning new things about themselves and others in the classroom. I think that helps to build teams later on in the course.

T: Yes, I agree. I also get the students to take lots of little creativity tests designed by famous researchers like Guilford (1957; 1959) and Torrance (1981). This helps them to learn about how others have tried to measure creative thinking skills. After we've analysed these tests, the students work in teams to build games that could be used to facilitate and measure creativity. They start off by listening to each other's ideas, then define the problem and follow the DT process. By the end, the students come up with some fascinating tests.

Three sources of data: Creativity tests; student reports; and, student surveys

1. Creativity Tests

N: I went to Tim's lesson on creativity tests and took the tests myself. From a personal perspective, they were really interesting and fun tests to take. But from an analytical perspective the quality and suitability of some of the tests was very high. As they were novel and fit for purpose, I think you could say they were new, surprising and valuable and hence genuinely creative. They were good examples of little-c creativity in the classroom.

T: The tests were incredibly varied. Some required visual and linguistic imagination as well as divergent and convergent thinking. For example, there was one test where participants combined visual prompts to imagine a scenario that seemed realistic. The

scoring contained divergent thinking concepts such as fluency and originality, but there was convergent thinking as the picture got more points for making sense.

N: Yes, and there was a lot of English language use going on. Not just in the discussion whilst making the tests, but also creative uses of grammar in the text that required a playful, reading between-the-lines approach (Jones, 2016). And, of course, the tests were created as English products with English instructions, so students got experience of the full design process.

T: Each team also got feedback from the other teams letting them know what they enjoyed about the test and how they could be improved. As a result, it was a good way to learn about creativity and the DT process.

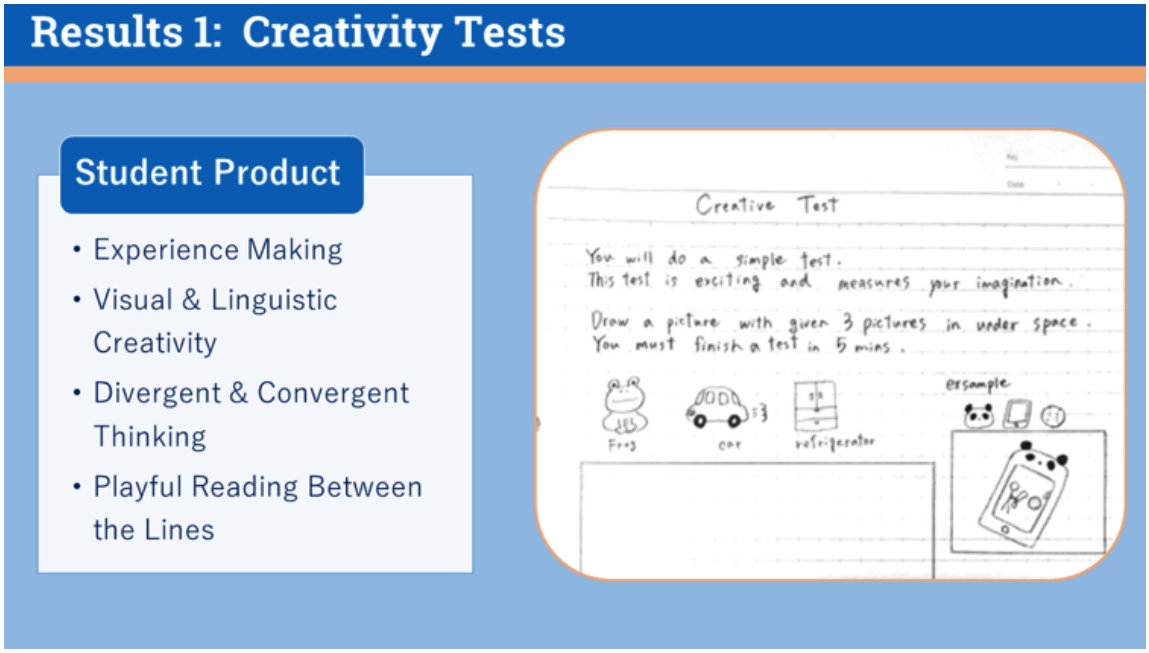


Figure 5. Student creativity test example

2. Student reports

N: The students wrote two reports. In the first report the students focused on personal identity, and in the second report, they explained what creativity is and analysed their creativity test.

T: I think your writing classes were also really important, as it provided an opportunity for students to get together and reflect on those activities. I remember you saying how you were surprised by the quality of the observations the students made and the length of their reports. Do you think they were being creative in their report writing, too?

N: I think we can say that the reports were full of new discoveries and original ideas on a personal level. We could say that the reports showed many examples of mini-c creativity. For example, when discussing creative people:

Rie said her calligraphy club mates have many divergent ideas and create new models in a collaborative process.

Shunsuke said, that for the YouTuber 'Tokai on air', being creative was a necessity and 'close to crazy'.

Whereas, Kiyo said her drama club peer is open to many other ideas, can take action and use his imagination.

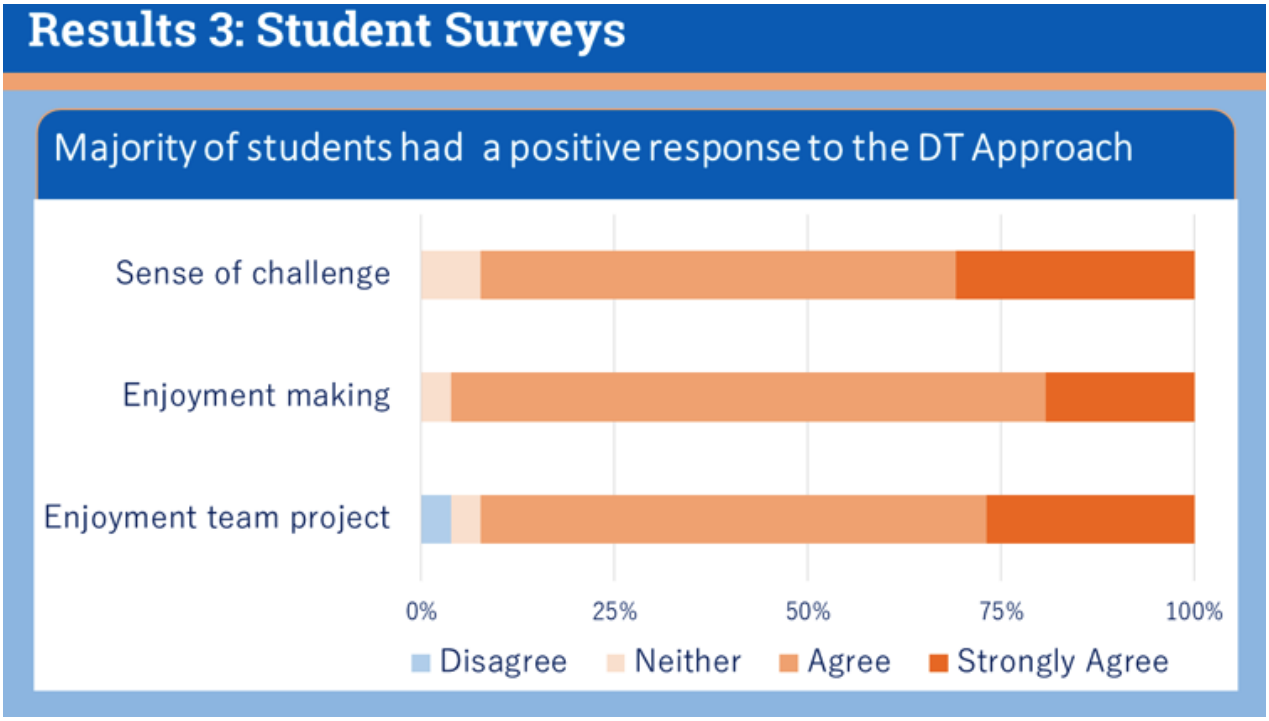
You can see the depth of thinking and expression was high for an intermediate class. And these formulations come from looking at aspects of their lives and reevaluating them. So, for me, they are examples of mini-c creativity. Rhodes (1961) suggests a '4Ps' model of creativity, that is, creativity can be divided up into four aspects of Place, Person, Process and Product. It was interesting to see that the students also expressed their ideas in similar terms. By far the easiest for students to talk about was creative people, including people that were close to them such as family members or club mates.

Figure 6. Student reports: People and process

3. Surveys

N: Tell me about the surveys and how the students reacted to the course?

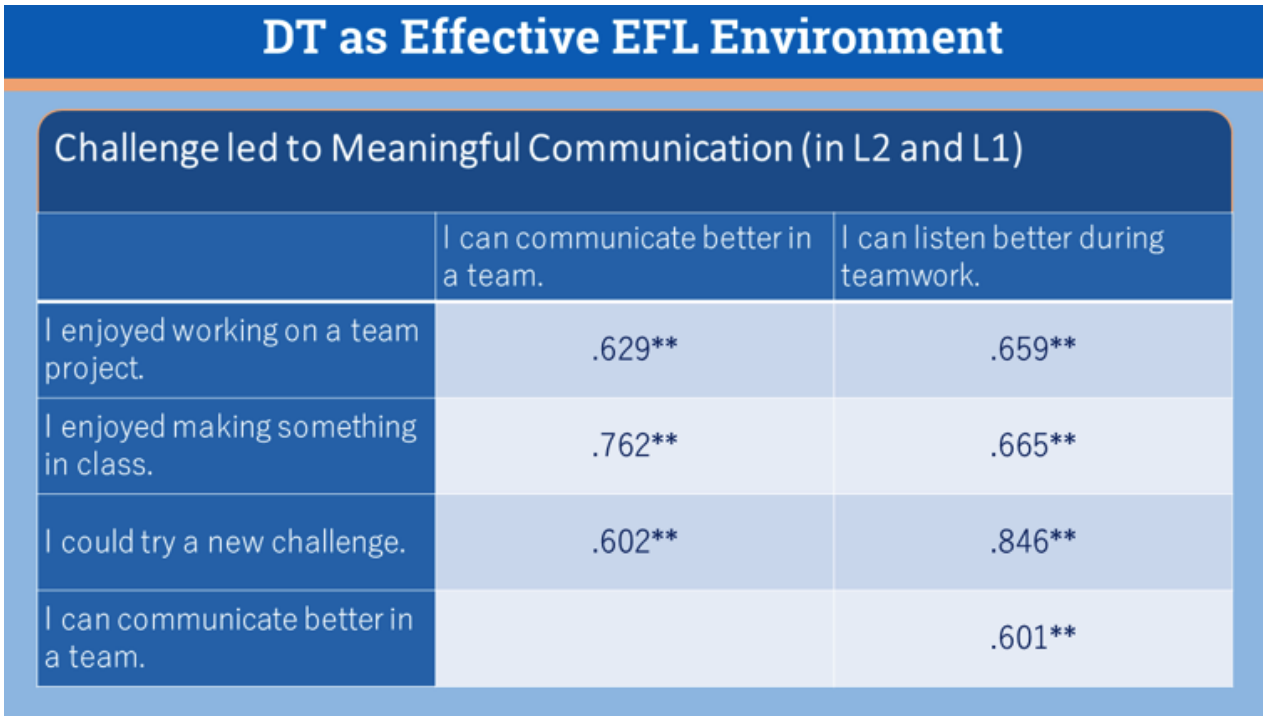
T: First and foremost, the students gave very positive responses to the DT approach. Students were asked about engagement, affective states and perceived skill development on a 5-point Likert scale. Over 90% of students enjoyed working in teams, making something in the class, and felt they could engage with a new challenge. Around 85% said they could communicate and listen better in a team, and that the activities made them think deeply and more flexibly about problems.



(n=26)

Figure 7. Affective responses to the Design Thinking approach

N: And did you find some interesting correlations?



	I can communicate better in a team.	I can listen better during teamwork.
I enjoyed working on a team project.	.629**	.659**
I enjoyed making something in class.	.762**	.665**
I could try a new challenge.	.602**	.846**
I can communicate better in a team.		.601**

Figure 8. Correlations: Design Thinking and communication skills

T: There were a large number of correlations between DT activities and perceived improvements in communication skills. For example, as can be seen in the slide above, feeling an improvement in team communication skills was strongly correlated with making something ($r=0.762$, $p<0.01$), and moderately correlated with enjoying team

projects ($r=0.629$, $p<0.01$) and a sense of challenge ($r=0.602$, $p<0.01$). Furthermore, there was a strong correlation between improvement in listening and a sense of challenge ($r=0.846$, $p<0.01$). This could suggest that a sense of challenge makes people more attentive to others as they evaluate suggestions in order to think up solutions. So, it is possible the sense of purpose and challenge in DT creates an environment in which communication within a team becomes meaningful.

N: However, this communication wasn't just in L2. Japanese was also used when discussions became complex.

T: Yes, that's right. Advanced groups can handle the linguistic challenges but intermediate groups need a bit more training and support.

What does it all mean?

N: In general, I think the quality of the tests showed students could apply their understanding of creativity to a practical problem in innovative ways, and that they could be creative with English. The correlations also suggest purposeful, open-ended activities that require collaboration facilitated that kind of creative engagement and meaningful communication. And the activities provided motivation for reflection and in-depth report writing.

T: I also think the writing classes provided opportunities for the students to organize their thoughts and hence be more focused in their problem solving.

N: Yes, I agree. But also, I think we need to reduce the report writing a little and devote more time to on-task communication skills.

T: Yes, we need to do that to reduce the amount of L1 used during discussions. I also think we need to develop more conversation tools to help students in the more complex dialogues. I think we found that students responded well to concrete examples of creative people and objects. This really helped them develop their thought. And they also expressed a preference for more multimodal and hands-on learning. So, it would be good to integrate more engineering-type problems and inter-personal tasks that require empathy and can facilitate social-emotional imagination.

Conclusion

T: If we make these changes, DT can be an effective way to improve student interaction, communicative competence and linguistic imagination in the EFL classroom.

N: Yes, and DT is a viable model for enabling students to experience the creative process in teams and gain experience of creating a real product in the classroom.

T: Yes, if we think about the skills necessary for the creative economy and modern workplace, DT can enable a lot of important skills development. Through interaction, students can develop deep listening, social-emotional imagination and become aware of diversity. They can challenge themselves in new ways to solve problems and these challenges can enable them to engage in meaningful communication and explore new

ways of thinking. They can gain some of the skills and confidence necessary to operate in a global and digital marketplace where creative skills are becoming a necessity.

Future Research

N: I think that over and above developing the on-task communication tools, it would be great to focus on assessment as well.

T: Yes, I think the Consensual Assessment Tool (CAT) (Hennessey, Amabile & Mueller, 2011) would be good for analysing the creative aspects of the course. And DT would also be a good match for positive psychology approaches that focus on autonomy.

N: So, Seligman's (2011) PERMA model might be another interesting avenue of research in the future. Perhaps then we might make some more Pro-c insights... and finally hit Big-C...

T: We can dream.

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