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.

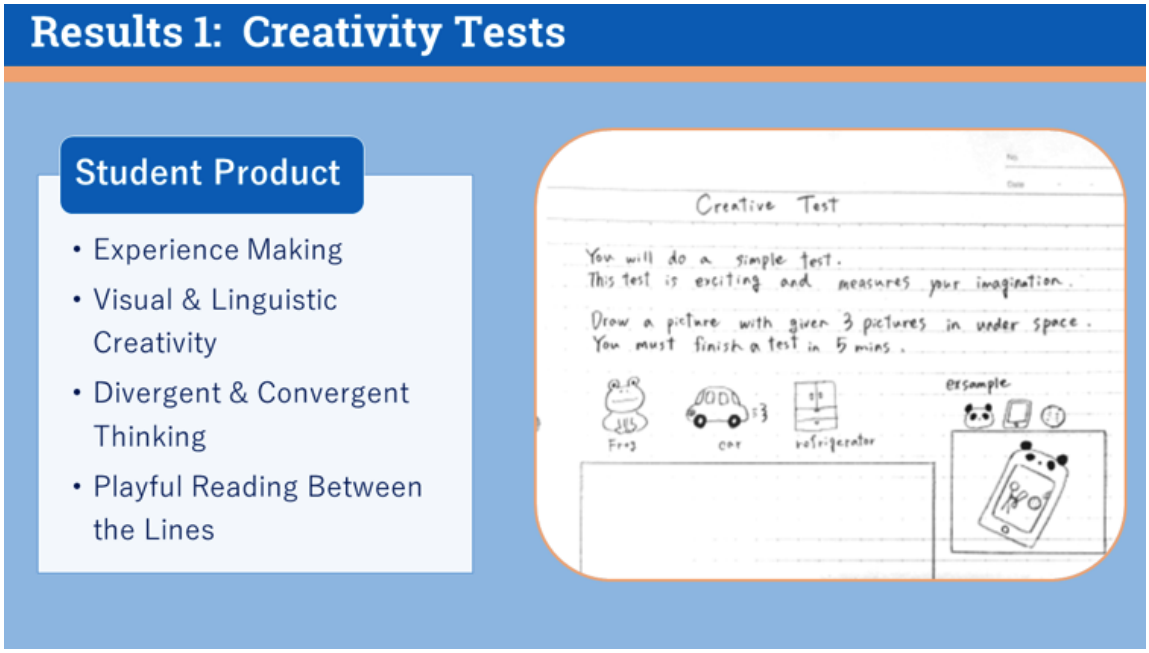


Figure 5. Student creativity test example

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.

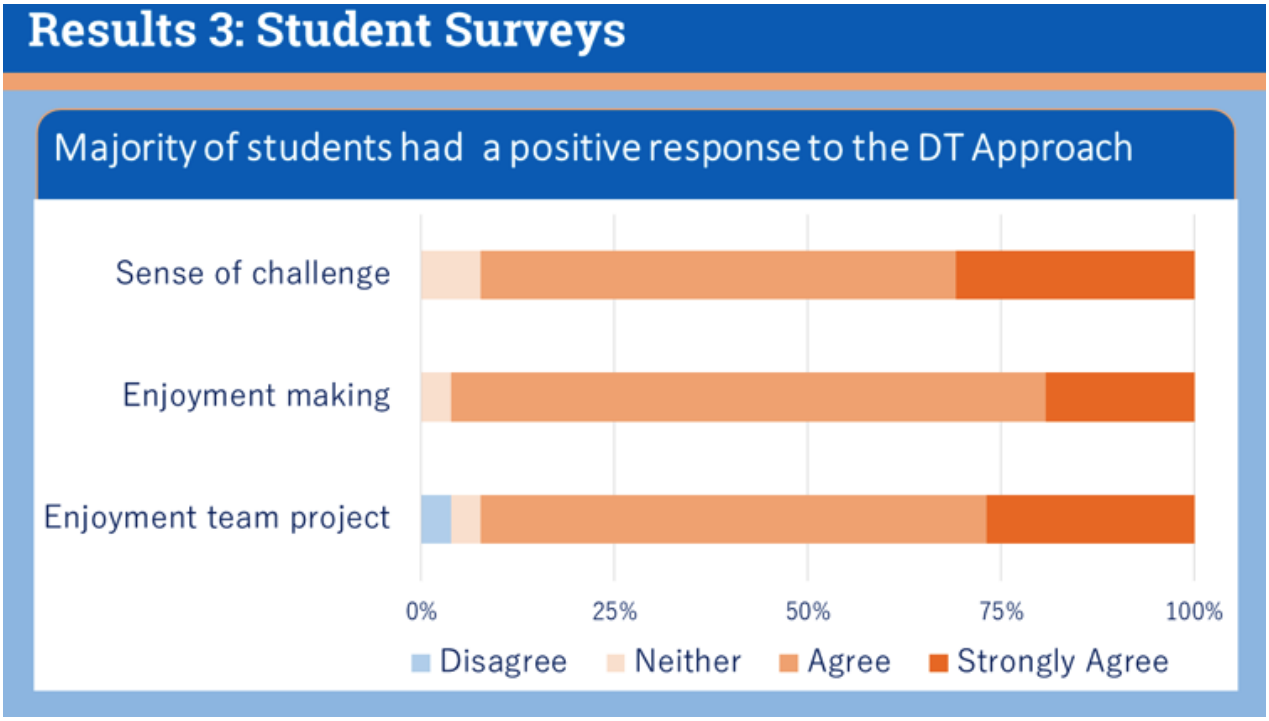
You can see the depth of thinking and expression was high for an intermediate class. And these formulations come from looking at aspects of their lives and reevaluating them. So, for me, they are examples of mini-c creativity. Rhodes (1961) suggests a '4Ps' model of creativity, that is, creativity can 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?

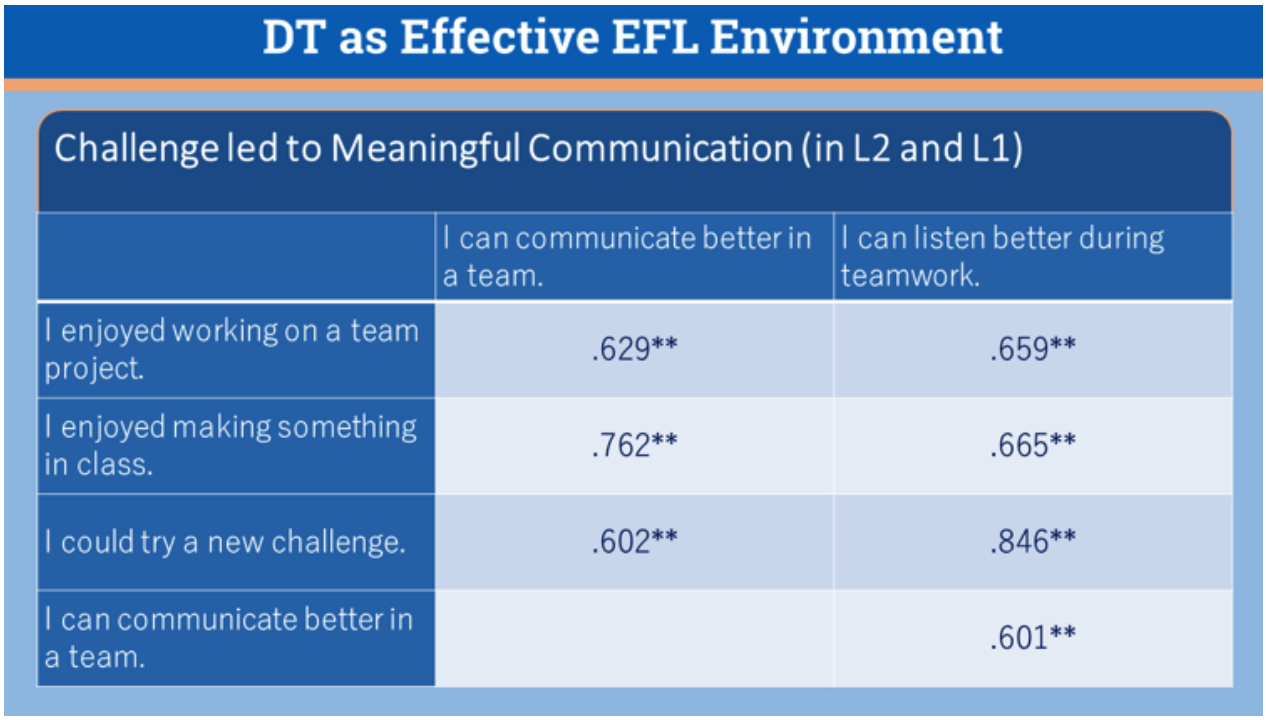
T: First and foremost, the students gave very positive responses to the DT approach. Students were asked about engagement, affective states and perceived skill development on a 5-point Likert scale. Over 90% of students enjoyed working in teams, making something in the class, and felt they could engage 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.

References

Amabile, T. M. (2018). Creativity and the labour of love. In R. J. Sternberg & J. C. Kaufman (Eds.), *The Nature of Human Creativity* (pp. 1-15). New York: Cambridge University Press.

Baer, J. (2018). The trouble with "creativity". In R. J. Sternberg & J. C. Kaufman (Eds.), *The Nature of Human Creativity* (pp. 16-31). New York: Cambridge University Press.

Beckett, G., & Miller, P. (Eds.) (2006). *Project-based Second and Foreign Language Education: Past, Present, and Future.* Greenwich, Connecticut: Information Age Publishing.

Beghetto, R. A., & Kaufman, J. C. (2017). Ever-broadening conceptions of creativity in the classroom. In R. A. Beghetto & J. C. Kaufman (Eds.), *Cambridge Companion to Nurturing Creativity in the Classroom* (pp. 67-85). New York: Cambridge University Press.

Boden, M. (2004). *The Creative Mind: Myths and Mechanisms.* London: Routledge.

Chappell, P. (2016). Creativity through inquiry dialogue. In R. Jones & J. Richards (Eds.), *Creativity in Language Teaching: Perspectives from Research and Practice* (pp. 130-145). New York: Routledge.

Choi, J. (2016). Creative criticality in multilingual texts. In R. Jones & J. Richards (Eds.), *Creativity in Language Teaching: Perspectives from Research and Practice* (pp. 146-161). New York: Routledge.

Cook, G. (2000). *Language Play, Language Learning*. Oxford: Oxford University Press.

Dervishaj, A., & Xhillari, R. (2009). Creativity in teaching different subjects in English using drama techniques. *Journal of Educational and Social Research*, 4(2), 438-442.

Fullan, M., & Langworthy, M. (2014). *A Rich Seam: How New Pedagogies Find Deep Learning.* Harlow, UK: Pearson.

Gotlieb, R., Jahner, E., Immordino-Yang, M., & Kaufman, S. (2016). How social-emotional imagination facilitates deep learning and creativity in the classroom. In R. Beghetto & J. Kaufman (Eds.), *Nurturing Creativity in the Classroom (Current Perspectives in Social and Behavioral Sciences* (pp. 308-336). Cambridge: Cambridge University Press.

Guilford, J. P. (1957). Creative abilities in the arts. *Psychological Review,* 64(2), 110-118.

Guilford, J.P. (1959). Three faces of intellect. *American Psychologist*, 14, 469-479.

Hafner, C. (2014). Embedding digital literacies in English language teaching: Students' digital video projects as multimodal ensembles. *TESOL Quarterly*, 48(4), 655- 658.

Hennessey B.A., Amabile T.M., & Mueller J.S. (2011). Consensual assessment. In M. Runco & S Pritzker (Eds.), *Encyclopedia of Creativity* (pp. 253-260). San Diego: Academic Press.

Jones, R. (2016). Creativity and language. In R. Jones & J. Richards (Eds.), *Creativity in Language Teaching: Perspectives from Research and Practice* (pp. 16-31). New York: Routledge.

Kaufman, K. (2013). 21 ways to 21st century skills: Why students need them and ideas for practical implementation. *Kappa Delta Pi Record,* 49(2), 78-83.

OECD [The Organization for Economic Cooperation and Development]. (2017). 21st century skills: Learning for the digital age. *The Forum Network.* Retrieved from: https://www.oecd- forum.org/users/50593-oecd/posts/20442-21st-century-skills-learning-for-the-digital-age

Rhodes, M. (1961). An analysis of creativity. *The Phi Delta Kappan*, 42, 305-310.

Seligman, M. E. (2012). *Flourish: A Visionary New Understanding of Happiness and Well-being*. New York: Simon and Schuster.

Tagg, C. (2013). Scraping the barrel with a shower of social misfits: Everyday creativity in text messaging. *Applied Linguistics*, 34(4), 480-500.

Torrance, E.P. (1981). Empirical validation of criterion referenced indicators of creative ability through a longitudinal study. *Creative Child and Adult Quarterly*, 6, 136-40.

United Nations Conference on Trade and Development (UNCTAD) (2018). *Creative Economy Outlook: Trends in International Trade in Creative Industries*. (UNCTAD/ DITC/TED/2018/3). United Nations, Geneva: United Nations.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, Mass.: Harvard University Press.

World Economic Forum. (2016). *The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Retrieved from: http://www3.weforum.org/docs/ WEF_Future_of_Jobs.pdf

World Bank. (2019). *World Development Report 2019: The Changing Nature of Work*. Washington, DC: World Bank.

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