Jurnal Pendidikan Bahasa Inggris Undiksha

Volume 11, Number 1, 2023, pp. 42-48 P-ISSN: 2614-1906 E-ISSN: 2614-1892

Open Access: https://ejournal.undiksha.ac.id/index.php/JPBI



Perceived Teaching Creativity and Observed Implementation of Creativity in Distance Learning Activities

I Made Agus Adhiwiguna^{1*}, Luh Putu Artini², Luh Gede Eka Wahyuni³



1,2,3 English Language Education, Ganesha University of Education, Bali, Indonesia

ARTICLEINFO

Article history:

Received February 16, 2023 Revised February 19, 2023 Accepted May 15, 2023 Available online May 25, 2023

Kata Kunci:

Kreativitas, Kreativitas Guru, pembelajaran jarak jauh

Keywords:

Creativity, Teachers' Creativity, Distance Learning

DOI:

https://doi.org/10.23887/jpbi.v11i1.3 2076

ABSTRAK

Di Kreativitas signifikan dalam pembelajaran jarak jauh. Karena pentingnya, para guru harus mempromosikan diri memiliki tingkat kreativitas yang baik dalam mengajar. Namun, guru masih kurang variasi dalam mengajar. Oleh karena itu, penelitian ini bertujuan untuk menganalisis persepsi guru dan kreativitas mengajar guru yang diamati dalam pembelajaran jarak jauh. Fokus penelitian ini adalah untuk mengidentifikasi kesenjangan antara persepsi guru dan fakta yang diamati dalam kreativitas mengajar di kelas. Penelitian ini menggunakan metode campuran tertanam. Pengumpulan data dilakukan dengan menggunakan kuesioner, observasi, dan wawancara mendalam. Guru bahasa Inggris dipilih sebagai subjek penelitian. Data dianalisis secara kuantitatif. Hasilnya menunjukkan bahwa guru menganggap diri mereka cukup kreatif dalam melakukan pembelajaran jarak jauh. Guru dikategorikan sebagai tidak mungkin kreatif dalam melakukan pembelajaran jarak jauh. Kesenjangan tersebut terjadi karena di satu sisi guru menilai dirinya cukup kreatif, sedangkan di sisi lain tidak memenuhi kategori guru kreatif. Dapat diartikan bahwa guru perlu meningkatkan kreativitasnya agar tidak terjadi kegiatan pembelajaran yang monoton.

ABSTRACT

Creativity was significant in distance learning. As its importance, the teachers had to promote themselves of having a good creativity level in teaching. However, the teachers still lack variation in teaching. Therefore, this research aimed to analyze the teachers' perception and teachers' observed teaching creativity in distance learning. The focus of the research was to identify the discrepancy between teachers' perceptions and facts as observed in teaching creativity in the classroom. This research applied an embedded mix method. The data collection was done by using questionnaires, observation, and in-depth interviews. English teachers were chosen as the research subject. The data were analyzed quantitatively. The result demonstrated that teachers perceived themselves as moderately creative in conducting distance learning. Teachers were categorized as unlikely creative in conducting distance learning. The discrepancy occurred since, on the one hand, teachers perceived themselves as moderately creative, while on the other hand, they did not meet the category of a creative teacher. It can be interpreted that teachers need to improve their creativity to avoid monotonous learning activities.

This is an open access article under the <u>CC BY-SA</u> license. Copyright © 2023 by Author. Published by Universitas Pendidikan Ganesha.



1. INTRODUCTION

The rapid changes in several areas such as technology, economy, society, and education have marked the 21st century. The terms "21st-century skills" and "21st-century learning" are widely known these days. 21st-century learning is a skill-oriented learning system. The framework of 21st-century learning is communication, collaboration, critical thinking, and creativity (Cubukcu et al., 2020; Ichsan et al., 2020). These 21st-century skills can be described as 4C, and it is essential to master all those four skills in this era. Those skills are collaboration, critical thinking, communication, and creativity (Khoiri et al., 2021; Tang et al., 2020; Yu & Wan Mohammad, 2019). Then, previous study adds that 21st-century education also focuses on technology and digital literacy (Cakrawati, 2017). The 21st-century skills are requiring the students and teachers to succeed in the implementation of 21st-century learning. The success of 21st-century skills is supporting by the technology used in the learning process (Norahmi, 2017; Siregar, 2020). The statement is in line with previous study who states that 21st-century learning optimizes internationalization and globalization. It means that integrating technology in the classroom must be done to achieve the essence of 21st-century learning (Boholano, 2017). Students and teachers live in a media-driven environment, which means both should be familiar with the information, media, and technology. Thus, this case requires the students to implement the students centered that forces the students to learn actively and critically (Blackie et al., 2010; Sumardi & Muamaroh, 2020). This will make the learning

process more interactive because more interactions will occur, and contextual material related to students' real life is also used in student-centered learning (Huerta et al., 2018; Rutta et al., 2021). However, in the implementation of 21st-century learning, teachers are also taking a role in the learning process, enabling them to have creativity in teaching. It because the implementation of 21st-century learning requires good preparation and planning. Designing activities, media, and tools are needed to support the essence of 21st-century learning and create exciting and effective learning conditions. Teachers should create a classroom that will support and promote teaching and learning in 21st-century (Chai et al., 2018; Ennis, 2011; Suwartono & Aniuranti, 2019). In creating a supportive classroom, teachers need to develop their creativity based on the students' needs. Teaching creatively means using an imaginative approach to make exciting and practical learning, whereas teaching creativity refers to developing students' creative thinking (Cayirdag, 2017; Hill, 2021; Tegeh et al., 2022). Teacher's creativity is significant to help the students acquire basic knowledge, but creativity in the teaching and learning process is also essential to promoting 21st-century learning. Creativity in teaching and learning can be categorized as producing new and unique methods, various strategies, and firm commitments to effectively promote learners' success in learning (Arifani & Suryanti, 2019; Lastari & Silvana, 2020). To maintain an enjoyable teaching and learning process in the classroom for both teacher and student, preparing a creative teaching and learning activity is essential. These will have a good effect on the student and the teacher as well. As explained before, it can be said that teachers need to be creative to teach in the classroom. Teachers should create and design a creative teaching activity, integrate technologies in the school, make learning materials related to the real-life context in a new and innovative way. This is related to promote student-centered learning in 21st-century learning. Creativity in teaching can develop people's creative thinking (Álvarez-Huerta et al., 2022; Ehtiyar & Baser, 2019). When a teacher could teach creatively, it could make the class atmosphere more exciting, and the students will be more active and interactive.

However, since the covid-19 outbreak, teachers have limitations in teaching. It happened to the students in which gaining the knowledge in limit. In this situation, students and teachers utilize the technology, and it can be said as distance learning (Al-Takhyneh, 2018; Islam et al., 2022). Distance learning is the learning process that integrates computers, laptops, mobile phones, or other technologies appropriate for learning activities. Moreover, previous study states that distance learning is the learning process that is facilitated by several information technologies to reduce operational cost and increase the availability of education (Mahande et al., 2019). Distance learning is suitable for the outbreak of Covid-19 because the students can learn anytime and anywhere. They can start acquiring the knowledge from where ever they are and at any time without breaking the health protocol (Al-arimi, 2014; Bušelić, 2012; Leontyeva, 2018). The students and teachers are not coming to school, and they are just utilizing video conferences or platforms to do the learning activities.

Several previous studies conducted study realated to the teachers' readiness to implementing the 21stcentury skills related to the teachers' creativity in teaching. One of the research showed that the teachers were ready to implement the 21st-century learning underlying the teacher's creativity through professional development (Rusdin, 2018). Then, other study showed that teaching creatively significantly related to teaching effectiveness (Mingli, 2019). It is influenced by the five subscales that increase teachers' motivation and creativity in teaching. However, previous study showed in their research that most of the teachers perceived themselves as not creative teachers (Hun et al., 2013). By looking at the previous studies, it can be demonstrated that innovative teaching is significant in 21st-century learning. Creative teaching is taking a role in the learning process. Moreover, in this covid-19 outbreak, technology utilization is very needed for the success of learning activity. Based on the preliminary observation done in SMA N 1 Kuta Utara, the teachers did not develop their creativity efficiently. The teachers cause it still lack the knowledge on creating classroom creativity. Therefore, the importance of teachers using creativity in the distance learning process is much needed. The difference between this research and the previous research is that the researcher will observe the English teachers' perception of creativity and observe how they implement their creativity. The discrepancy was expected to occur since the data would be taken from how the teachers perceive their creativity and how they execute their creativity in the distance learning environment. Thus, the researcher would conducting study with aims to analyze the teachers' perception and teachers' observed teaching creativity in distance learning in SMA N 1 Kuta Utara.

2. METHOD

The research employed an embedded mixed method which used a self-rated questionnaire, classroom observation, and in-depth interview. An embedded mixed approach is a design in which one type of data supports the primary data (Creswell & Pioano Clark, 2007). The subject of this research was two English teachers in SMA N 1 Kuta Utara. The two teachers were aware that they were the study's subject and gave their consent to participate in this study. These English teachers were observed in how they perceive their creativity and how they implement it during the distance learning and learning process. The data gathered from these two

teachers then identified the discrepancy between how they perceive their creativity and how they implement the creativity during the distance learning session. A self-rated questionnaire and observation sheet were used to collect the data about teachers' perception of their creativity in the implementation of distance learning. This questionnaire and observation sheet contains the same 24 statements divided and based on three types of creativity. Namely, exploratory creativity, transformational creativity, and combinational creativity. Furthermore, every kind of creativity will be analyzed in three learning sections. The data were analyzed quantitatively.

After the score in every type of creativity was calculated, those scores were summed up and averaged to obtain the score in self-rated questionnaire and observation sheet. Thus, after calculating the core, the data will be classified into five categories. **Table 1** show the indicators used to interpret the level of teacher creativity.

Tabel 1. Indicators Used to Interpret the Creativity Level

Criteria of Creativity	Score
Unlikely Creative	$1 \le x \le 1.5$
Slightly Creative	$1.5 < x \le 2.5$
Moderately Creative	$2.5 < x \le 3.5$
Creative	$3.5 < x \le 4.5$
Very Creative	$4.5 < x \le 5$

The perception and their implementation of creativity were studied in this research. Table 1 interpreted five categories: unlikely creative, slightly creative, moderately creative, creative, and very creative. The five category teachers were labeled the teacher' perception and informed the teachers' creativity level. Furthermore, the discrepancy between how teachers perceived and implement their creativity in distance learning was examined.

3. RESULT AND DISCUSSION

Result

The first data gathered from the results of teachers' perception. The results is presented in Table 2.

Tabel 2. Teachers' Perception

Number	Types of Creativity	Score on Teachers'	Criteria
1	Plt	Perception	Madanahala Caratina
1	Exploratory	2.55	Moderately Creative
2	Transformational	2.51	Moderately Creative
3	Combinational	2.53	Moderately Creative
Average		2.53	Moderately Creative

After gathering the data of teachers' perceptions they found that their perception was moderately creative. It showed by the score was 2.53. Table 2 presents the teachers who perceived themselves as moderate criteria in exploratory, transformational, and combinational. It can be interpreted that the teachers still need to improve and develop themselves to upgrade their creativity level. The second data gathered from the observed creativity. Observed creativity did find teachers' implementation of creativity in the learning process. The result of the observation is presented in Table 3.

Tabel 3. Obvesred Creativity

Number	Types of Creativity	Score on Observation on Teachers' Creativity	Criteria
1	Exploratory	1.20	Unlikely Creative
2	Transformational	1.37	Unlikely Creative
3	Combinational	1.16	Unlikely Creative
	Average	1.24	Unlikely Creative

Based on Table 3 presented the detailed teachers' scores in three types of creativity. As seen from the table above, the teachers categorized the score in "Unlikely Creative" criteria. Accordingly, the teachers were classified in "Unlikely Creative" criteria because they were not often created and used various activities and media in the class. The learning rarely followed the lesson plan, using inductive learning, integrating technology, using real problem, making the students solve their problem using their prior knowledge, combining various media such as modern media and conventional media, creating engaging activity and combining different media delivering the material. The teachers' perception and observed perception continued by finding out the discrepancy between teachers' perception and teachers' implementation in the learning process. The difference is presented in the following Table 4.

Tabel 4. Teachers' Perceived and Observed Creativity

Types of Creativity	Teachers' Perception		Facts as Observed	
	Average Score	Criteria	Average Score	Criteria
Exploratory	2.55	Moderately Creative	1.20	Unlikely Creative
Transformational	2.51	Moderately Creative	1.37	Unlikely Creative
Combinational	2.53	Moderately Creative	1.16	Unlikely Creative
Average	2.53	Moderately Creative	1.24	Unlikely Creative

Table 4 shows the discrepancy between how they perceived their creativity in teaching in distance learning and facts as observed in the actual implementation of creativity. On one side, teachers perceived themselves as moderately creative in implementing their creativity in distance learning. Teachers stated they sometimes tried to follow the lesson plan, teach inductively, utilize various teaching platforms, and conduct interactive learning using combined media. However, on the other side, as observed, teachers mainly lack in activity, monotonous activity, lack of variation in using teaching media and platforms. They could not create an enjoyable learning atmosphere. Most of the time, teachers were only greeting and giving tasks, then leave the learning session. This later resulted in the lack of activity done by the teachers.

Discussion

Base on the result teachers still need to improve and develop themselves to upgrade their creativity level. It is because the learning rarely followed the lesson plan, using inductive learning, integrating technology, using real problem, making the students solve their problem using their prior knowledge, combining various media such as modern media and conventional media, creating engaging activity and combining different media delivering the material. In facts as observed in the actual implementation of creativity creative in implementing their creativity in distance learning, on the other side teachers mainly lack in activity, monotonous activity, lack of variation in using teaching media and platforms This research is in line with previous finding that teachers' readiness to adopt 21st-century learning is high. The average score of three creativity showed that teachers perceived their creativity as moderately creative criteria (Rashid et al., 2021). This is in line with the finding who stated that most teachers had shared their beliefs about the personality of a creative teacher (Hun et al., 2013). Subsequently, in general, they perceived themselves in the moderately clever criteria in creating various activity in the class, following the lesson plan, making group or work in pair, using inductive learning, integrating technology in delivering the material, using contextual problem, creating the students to solve their problem using their prior knowledge, creating different media in every meeting, utilizing existed media in the class, creating engaging activity and combining online and offline platform in conveying the material, and, using conventional media when it is needed. Moreover, other study conducted found that teachers were aware of the importance of the latest technology for creativity in the learning process (Alowayr & Al-Azawei, 2021). This is shown by how teachers perceived themselves as able to utilized technology in distance learning.

Additionally, based on the observation and the situation in distance learning in the class, the teachers were only capable of executing some of the creative aspects (Boden, 1998; Tegeh et al., 2022). Furthermore, based on the observation in the distance learning session, teachers could combine different platforms and media and utilize different kinds of media. However, the use of various platforms and media shown by the teachers was limited. This is in line with previous study which stated that teachers mostly use it as a tool to help them develop learning materials and create classroom activities (Alawamleh et al., 2022). Moreover, teachers cannot create innovative activities to make the class more interesting in conducting distance learning. The teacher is also shown to be unable to implement their creativity in post-activity, whereas they feel able to implement their creativity. This research can provide a better understanding of how creativity is identified and measured in the context of distance teaching. This can assist educators in developing effective creative strategies to enhance the learning process. The findings of this research can then be used to inform the development of policies and

practices related to distance learning. The implications of this research can assist in designing a more creative and relevant curriculum, as well as providing guidance for teachers in integrating creativity into distance learning activities. This research can be a basis for further research in the field of creativity in distance learning. The findings and methodology used can inspire further research that can develop and deepen understanding of creativity in the context of distance learning.

However, this research also has some limitations. This study relies on subjective perceptions related to teaching creativity. Self-confidence and subjective assessment of respondents can influence research results. In addition, individual perceptions of creativity may vary, so that differences in judgments may emerge. This research may have a limited sample, such as the number of respondents or a specific learning environment. This may limit the generalizability of the findings of this study to the wider population. Therefore, further research is needed with a larger sample and a variety of learning contexts to validate and expand on these findings. In this study, there is a possibility that there are external variables that are not fully controlled which can affect the results of the study. Several factors such as differences in the level of technological readiness, learning environment, and support from parents or tutors may have an influence on the perception of creativity and the implementation of creativity in distance learning activities.

4. CONCLUSION

Based on the research result, English Teachers in SMA Negeri 1 Kuta Utara perceived themselves as moderately creative in conducting distance learning. They also showed consistency in rating themselves as moderately creative in exploratory, transformational, and combinational creativity. However, English teachers in SMA Negeri 1 Kuta Utara were unlikely to be creative in conducting distance learning. They also showed consistency in performing their creativity in distance learning. Thus, a discrepancy occurred between how teachers perceived their creativity in distance learning and how they implemented real teaching distance learning. The teachers perceived themselves as moderately creative. However, teachers mainly lack in activity, monotonous activity, lack of variation in using teaching media and platforms, and could not create an engaging learning atmosphere. Most of the time, teachers were only greeting and giving tasks, then leave the learning session. This later resulted in the lack of activity done by the teachers. Thus, teachers need to develop themselves on preparing creative distance learning to avoid monotonous learning activities.

5. REFERENCES

- Al-arimi, A. M. A. (2014). Distance Learning. *Procedia Social and Behavioral Sciences*, 152(2014), 82–88. https://doi.org/10.1016/j.sbspro.2014.09.159.
- Al-Takhyneh, B. (2018). Attitudes towards using mobile applications in teaching mathematics in open learning systems. *International Journal of E-Learning & Distance Learning*, 33(1), 1–16. https://eric.ed.gov/?id=EJ1180063.
- Alawamleh, M., Al-Twait, L. M., & Al-Saht, G. R. (2022). The effect of online learning on communication between instructors and students during Covid-19 pandemic. *Asian Education and Development Studies*, *11*(2), 380–400. https://doi.org/10.1108/AEDS-06-2020-0131.
- Alowayr, A., & Al-Azawei, A. (2021). Predicting mobile learning acceptance: An integrated model and empirical study based on the perceptions of higher education students. *Australasian Journal of Educational Technology*, 37(3), 38–55. https://doi.org/10.14742/ajet.6154.
- Álvarez-Huerta, P., Muela, A., & Larrea, I. (2022). Disposition toward critical thinking and creative confidence beliefs in higher education students: The mediating role of openness to diversity and challenge. *Thinking Skills and Creativity*, 43(January). https://doi.org/10.1016/j.tsc.2022.101003.
- Arifani, Y., & Suryanti, S. (2019). The influence of male and female ESP teachers' creativity toward learners' involvement. *International Journal of Instruction*, 12(1), 237–250. https://eric.ed.gov/?id=EJ1202151.
- Blackie, M. A. L., Case, J. M., & Jawitz, J. (2010). Student-centredness: the link between transforming students and transforming ourselves. *Teaching in Higher Education*, 15(6), 637–646. https://doi.org/10.1080/13562517.2010.491910.
- Boden, M. A. (1998). Creativity and artificial intelligence. *Artificial Intelligence*, 103(1998), 347–356. https://doi.org/10.1016/S0004-3702(98)00055-1.
- Boholano, H. (2017). Smart social networking: 21st Century teaching and learning skills. *Research in Pedagogy*, 7(2), 21–29. https://doi.org/10.17810/2015.45.
- Bušelić, M. (2012). Distance learning-concepts and contributions. *Prethodno*, 1(2012), 23–34. https://doi.org/10.15291/oec.209.
- Cakrawati, L. M. (2017). Students' perceptions on the use of online learning platforms in EFL classroom. English Language Teaching and TechnologyJournal, 1(1), 22–30.

- https://doi.org/10.17509/elt%20tech.v1i1.9428.
- Cayirdag, N. (2017). Creativity fostering teaching: Impact of creative self-efficacy and teacher efficacy. *Kuram Ve Uygulamada Eğitim Bilimleri Educational Sciences: Theory & Practice*, 17(6), 1959–1975. https://doi.org/10.12738/estp.2017.6.0437.
- Chai, C. S., Hwee, J., Koh, L., & Teo, Y. H. (2018). Enhancing and modeling teachers' design beliefs and efficacy of technological pedagogical content knowledge foe 21st century quality learning. *Journal of Educational Computing Research*, 0(0), 1–25. https://doi.org/10.1177/0735633117752453.
- Creswell, J., & Pioano Clark, V. (2007). Introducing a mixed method design. *Designing and Conducting Mixed Methods Research*, 58–89.
- Cubukcu, C., Murat, K. C., & Yigit, O. (2020). "Mobile Game Development for Children with Down Syndrome." *International Journal of Interactive Mobile Technologies*, 14(20), 174–83,. https://doi.org/10.3991/IJIM.V14I20.16573.
- Ehtiyar, R., & Baser, G. (2019). University education and creativity: An assessment from students' perspective. *Eurasian Journal of Educational Research*, 80(2019), 113–132. https://doi.org/10.14689/ejer.2019.80.6.
- Ennis, R. H. (2011). *The Nature of Critical Thinking: An Outline of Critikal Thinking Dispositions and Abilities*. University of Illinois.
- Hill, J. B. (2021). Pre-Service Teacher Experiences during COVID 19: Exploring the Uncertainties between Clinical Practice and Distance Learning. *Journal of Practical Studies in Education*, 2(2), 1–13. https://doi.org/10.46809/jpse.v2i2.18.
- Huerta, M., Goodson, P., Beigi, M., & Chlup, D. (2018). Graduate Students as Academic Writers: Writing Anxiety, Self-Efficacy, and Emotional Intelligence. *Tourism Recreation Research*, 36(4), 19. https://doi.org/10.1080/07294360.2016.1238881.
- Hun, R., Cheung, P., & Leung, C. H. (2013). Preschool teachers' beliefs of creative pedagogy: Important for fostering creativity. *Creativity Research Journal*, 25(4), 397–407. https://doi.org/10.1080/10400419.2013.843334.
- Ichsan, I. Z., Hasanah, R., Ristanto, R. H., Rusdi, R., Cahapay, M. B., Widiyawati, Y., & Rahman, M. M. (2020). Designing an Innovative Assessment of HOTS in the Science Learning for the 21st Century. *Jurnal Penelitian Dan Pembelajaran IPA*, 6(2), 211. https://doi.org/10.30870/jppi.v6i2.4765.
- Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-Learning and Digital Media*, 19(1), 36–54. https://doi.org/10.1177/20427530211027721.
- Khoiri, A., Evalina, Komariah, N., Utami, R. T., Paramarta, V., Siswandi, J., & Sunarsi, D. (2021). 4Cs Analysis of 21st Century Skills-Based School Areas. *Journal of Physics: Conference Series*, 1764(1), 012142. https://doi.org/10.1088/1742-6596/1764/1/012142.
- Lastari, D. S., & Silvana, R. (2020). the Effects of Summarizing Using Infographics on Efl Learners' Reading Comprehension. *Globish: An English-Indonesian Journal for English, Education, and Culture*, 9(2), 128. https://doi.org/10.31000/globish.v9i2.2707.
- Leontyeva, I. A. (2018). Modern distance learning technologies in higher education: Introduction problems. *EURASIA Journal of Mathematics*, *Science*, and *Technology Education*, 14(10), 1–8. https://doi.org/10.29333/ejmste/92284.
- Mahande, R. D., Jasrudin, J., & Nasir, N. (2019). IS success model for Edmodo e-learning user satisfaction through TAM on students. *Journal of Educational Science and Technology*, *5*(2), 140–152. https://garuda.kemdikbud.go.id/documents/detail/1604764.
- Mingli, L. (2019). Using Mind Maps to Develop English Majors' Essay Writing in China. *Sino-US English Teaching*, 16(10), 419–425. https://doi.org/10.17265/1539-8072/2019.10.003.
- Norahmi, M. (2017). 21st-century teachers: The students' perspectives. *Journal on English as a Foreign Language*, 7(1), 77. https://doi.org/10.23971/jefl.v7i1.538.
- Rashid, A. H. A., Shukor, N. A., Tasir, Z., & Na, K. S. (2021). Teachers' perceptions and readiness toward the implementation of virtual learning environment. *International Journal of Evaluation and Research in Education*, 10(1), 209–214. https://doi.org/10.11591/ijere.v10i1.21014.
- Rusdin, N. M. (2018). Teachers' Readiness in Implementing 21st Century Learning. *International Journal of Academic Research in Business and Social Sciences*, 8(4). https://doi.org/10.6007/ijarbss/v8-i4/4270.
- Rutta, C. B., Schiavo, G., Zancanaro, M., & Rubegni, E. (2021). Comic-based Digital Storytelling for Content and Language Integrated Learning. *Educational Media International*, 58(1), 21–36. https://doi.org/10.1080/09523987.2021.1908499.
- Siregar, R. A. (2020). The Effective 21st-century Pedagogical Competence as Perceived by Pre-service English Teachers. *Pedagogy: Journal of English Language Teaching*, 8(1), 1. https://doi.org/10.32332/pedagogy.v8i1.1953.

- Sumardi, S., & Muamaroh, M. (2020). Edmodo impacts: Mediating digital class and assessment in english language teaching. *Cakrawala Pendidikan*, *39*(2), 319–331. https://doi.org/10.21831/cp.v39i2.30065.
- Suwartono, T., & Aniuranti, A. (2019). Digital Teaching Tools in 21st Century EFL Classroom: Are Our Teachers Ready? *ELLITE: Journal of English Language, Literature, and Teaching*, 3(2), 57. https://doi.org/10.32528/ellite.v3i2.1916.
- Tang, T., Vezzani, V., & Eriksson, V. (2020). Developing critical thinking, collective creativity skills and problem solving through playful design jams. *Thinking Skills and Creativity*, *37*(May), 100696. https://doi.org/10.1016/j.tsc.2020.100696.
- Tegeh, I. M., Santyasa, I. W., Agustini, K., Santyadiputra, G. S., & Juniantari, M. (2022). Group Investigation Flipped Learning in Achieving of Students' Critical and Creative Thinking Viewed from Their Cognitive Engagement in Learning Physics. *Journal of Education Technology*, 6(2), 350–362. https://ejournal.undiksha.ac.id/index.php/JET.
- Yu, T. X., & Wan Mohammad, W. M. R. (2019). Integration of 21st Century Learning Skills (4C Elements) in Interventions to Improve English Writing Skill Among 3K Class Students. *International Journal of Contemporary Education*, 2(2), 100. https://doi.org/10.11114/ijce.v2i2.4498.