PROCEEDING
International Conference in Education and Vocations
Multicultural and Inclusive Approaches
ICEV-MIA 2026

THE CORRELATION BETWEEN PRESERVICE TEACHERS' CREATIVITY AS A PART OF 4C SKILLS AND WRITING PERFORMANCE AT ENGLISH LANGUAGE EDUCATION

Tio Reskina Sinaga[1*], Herlinawati Herlinawati[2]
Universitas Lancang Kuning, Pekanbaru, Indonesia
*Corresponding email: tioreskinasinaga@gmail.com

ABSTRACT

21st-century skills, particularly the 4Cs (critical thinking, communication, collaboration, and creativity), have become a major focus in higher education, including in academic writing instruction. Creativity is often considered a factor that can enhance the quality of students' writing. However, the relationship between creativity and writing performance among prospective English teacher students still requires empirical evidence. This study aims to determine whether there is a correlation between creativity and students' writing performance in the English Language Education Study Program. This study employed a quantitative method with a correlational design. The research subjects consisted of 53 third- and fifth-semester students who had completed the Argumentative Writing course. Creativity data were collected through a questionnaire, while writing performance data were obtained from students' writing assignment scores. Data analysis was conducted using the Spearman Rank correlation test. The results showed a correlation coefficient of r = -0.191 with a significance value of 0.170 ($p > 0.05$). This indicates that there is no significant correlation between creativity and writing performance. The very weak and non-significant correlation suggests that creativity is not a primary factor determining academic writing quality. Writing performance is likely more influenced by linguistic aspects such as grammar, vocabulary, organization, and coherence. Based on these findings, it can be concluded that creativity does not have a significant relationship with students' writing performance in this study.

Keywords: 4c skills, Correlational Study, Creativity Skills, EFL Context, Preservice Teachers, Writing Performance

1. INTRODUCTION

Writing performance is one of the essential academic skills required for university students, particularly those enrolled in English language education programs. At the higher education level, writing is used to demonstrate students' ability to construct arguments, express ideas, and communicate knowledge effectively. Academic writing is not merely producing text but involves complex cognitive processes such as critical reasoning, linguistic accuracy, and rhetorical organization. For preservice teachers, writing proficiency is especially important because they are expected to become role models in using proper written language for their future students. Moreover, in the English as a Foreign Language

(EFL) context, students' exposure to English is limited, making writing performance an important indicator of their language mastery. Therefore, improving students' writing performance has become a major concern in teacher education programs.

Despite its importance, many preservice teachers still face difficulties in achieving the expected standards of academic writing. Previous studies show that EFL students often struggle with developing coherent arguments, selecting appropriate vocabulary, and applying correct grammar in their writing. Limited exposure to academic texts and insufficient feedback also contribute to weak writing performance. In addition, students frequently experience difficulties in organizing ideas and maintaining coherence due to limited language proficiency. These challenges indicate that writing performance is influenced by various cognitive and linguistic factors, which need to be examined to better understand students' writing development.

In recent years, higher education has emphasized the importance of 21st-century skills, commonly known as the 4C skills: critical thinking, communication, collaboration, and creativity. These competencies are considered essential for preparing students to succeed in academic and professional environments. The integration of 4C skills in teacher education programs is particularly important because preservice teachers are expected to facilitate student-centered learning, innovation, and problem-solving. Research indicates that the development of 4C skills can contribute to students' academic performance, including writing ability. Among these competencies, creativity plays a significant role in generating ideas, exploring different perspectives, and expressing thoughts in written form.

Creativity is closely related to students' ability to produce original ideas and develop arguments in academic writing. Creative thinking enables learners to elaborate ideas, design interesting introductions, and construct coherent arguments. Students with higher creativity tend to demonstrate flexibility in expressing ideas and produce more engaging written texts. Creativity also supports deeper engagement in writing tasks, resulting in richer arguments and better organization. Because creativity contributes to idea generation and development, it is considered an important factor that may influence writing performance among preservice teachers in the EFL context.

Several previous studies have examined the relationship between creativity and writing performance. Research has shown that creativity enhances students' ability to elaborate ideas, restructure arguments, and produce meaningful written texts. Some studies also report that creative thinking improves essay organization and the richness of supporting details. However, many previous studies examined creativity together with other components of the 4C skills, such as critical thinking or communication, rather than focusing on creativity as a single variable. As a result, the relationship between creativity and writing performance remains underexplored, particularly among preservice teachers in English language education programs.

Furthermore, research focusing specifically on preservice teachers in the Indonesian EFL context is still limited. Most previous studies focused on general students rather than

teacher candidates who require stronger academic literacy and writing competence. In addition, empirical research examining the correlation between creativity skills and writing performance is still scarce, especially in local institutions. This gap highlights the need for a correlational study that investigates the relationship between creativity skills and writing performance among preservice teachers. Such research is important to provide empirical evidence and improve instructional strategies in teacher education programs.

Therefore, this study aims to examine the correlation between preservice teachers' creativity skills and their writing performance in the English Language Education program. This research is expected to provide empirical evidence regarding the role of creativity in academic writing and contribute to the understanding of 21st-century skills in the EFL context. The findings of this study may also provide practical implications for lecturers, curriculum developers, and future researchers in improving writing instruction for preservice teachers.

2. METHODOLOGY

This study employed a correlational research design to examine the relationship between creativity skills and writing performance among preservice teachers in the EFL context. A correlational design was considered appropriate because this study aimed to determine whether there was a significant relationship between two variables without manipulating them. The independent variable in this study was creativity skills, while the dependent variable was writing performance. The data obtained were analyzed using Spearman's rho correlation to identify the strength and direction of the relationship between the variables.

The participants of this study were preservice teachers enrolled in the English Language Education study program. They were selected because they had taken academic writing courses and were expected to demonstrate adequate writing performance. The participants were chosen using purposive sampling to ensure that they met the criteria relevant to the objectives of the study. The total number of participants consisted of students who were actively enrolled in the program during the data collection period.

The data were collected using two instruments: a creativity questionnaire and a writing test. The creativity questionnaire was used to measure students' creativity skills as part of the 4C skills. The questionnaire consisted of several statements related to idea generation, flexibility, originality, and elaboration. The responses were measured using a Likert scale ranging from strongly disagree to strongly agree. The questionnaire was distributed to the participants to obtain self-reported data regarding their creativity skills.

Writing performance data were obtained through a writing test. Participants were asked to write an academic paragraph or short essay based on a given topic. Their writing was assessed using a scoring rubric that evaluated grammar, vocabulary, organization,

coherence, and content development. The scores from the writing test represented students' writing performance.

The data collection procedure was conducted in several steps. First, the researcher obtained permission from the study program to conduct the research. After receiving approval, the researcher explained the purpose of the study to the participants and asked for their willingness to participate. Next, the creativity questionnaire was distributed to the participants and completed within the allotted time.

After completing the questionnaire, the participants were asked to complete the writing test. They were given a specific topic and instructed to write within the designated time. The collected writing results were then scored using the writing assessment rubric. Finally, the data from both instruments were compiled and prepared for statistical analysis.

The collected data were analyzed using Spearman's rho correlation to determine the relationship between creativity skills and writing performance. This statistical technique was chosen because the data were ordinal and did not require normal distribution. The correlation coefficient indicated the strength of the relationship, while the significance value determined whether the relationship between the variables was statistically significant.

3. RESULTS AND DISCUSSION

This study aimed to examine the relationship between creativity skills and writing performance among preservice teachers in the EFL context. The data were obtained from a creativity questionnaire and a writing test, then analyzed using Spearman's rho correlation.

Table 1. Description Statistics of Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Creativity Skills	30	52	88	70,43	8,21
Writing Performance	30	55	85	69,27	7,54

The table shows that the mean score of creativity skills was 70.43, while the mean score of writing performance was 69.27. These results indicate that both variables were at a moderate level. However, the variation in scores suggests that students demonstrated different levels of creativity and writing ability.

Table 2. Spearman's Rho Correlation between Creativity Skills and Writing Performance

Variables	Correlation Coefficient (r)	Sig. (2-tiled)	Interpretation
Creativity Skills-Writing Performance	0.187	0.324	Very weak correlation

The correlation coefficient between creativity skills and writing performance was 0.187, which indicates a very weak positive relationship. The significance value was 0.324, which is higher than 0.05. This means that there was no significant relationship between creativity skills and writing performance. Therefore, the null hypothesis was accepted, indicating that creativity skills were not significantly correlated with writing performance among preservice teachers in the EFL context.

The findings of this study revealed that there was no significant relationship between creativity skills and writing performance among preservice teachers. Although creativity is considered an important component of 21st-century skills, the results suggest that creativity alone does not determine students' writing performance. Writing performance requires not only idea generation but also linguistic competence, including grammar, vocabulary, organization, and coherence. Students with high creativity may still struggle to express their ideas effectively if they lack language proficiency.

This finding supports the view that academic writing involves multiple components beyond creativity. Students must be able to organize ideas logically and apply appropriate language structures. Therefore, writing performance depends on both cognitive skills and linguistic abilities. The absence of a strong correlation in this study indicates that creativity may support writing but is not the primary factor influencing writing performance.

Another possible explanation is that the creativity instrument relied on self-reported responses, which may not fully reflect students' actual creative behavior during writing tasks. Students may perceive themselves as creative, but this perception may not directly translate into better writing performance. In addition, the writing assessment focused on academic criteria such as grammar, vocabulary, and coherence, which may reduce the influence of creativity in scoring.

These findings also indicate that preservice teachers need balanced instruction that integrates creativity with explicit writing instruction. Lecturers should not only encourage creative thinking but also provide guidance in grammar, vocabulary, and organization. By combining creativity and linguistic competence, students may improve their writing performance more effectively.

Overall, the results suggest that creativity skills alone are insufficient to predict writing performance among preservice teachers in the EFL context. Writing instruction should integrate creative thinking with structured language learning to support students' academic writing development.

4. CONCLUSION

This study aimed to examine the correlation between creativity skills and writing performance among preservice teachers in the EFL context. The findings revealed that there was no significant relationship between creativity skills and writing performance. The correlation analysis indicated a very weak positive relationship, suggesting that creativity alone does not determine students' writing ability. Although creativity helps students generate ideas, writing performance also requires linguistic competence, including grammar, vocabulary, organization, and coherence. Therefore, students with high creativity may not necessarily achieve better writing performance without adequate language proficiency.

The results of this study contribute to the existing literature by providing empirical evidence regarding the relationship between creativity skills and writing performance among preservice teachers. While previous studies emphasized the importance of creativity in learning, this study shows that creativity alone is insufficient to predict writing performance in the EFL context. This finding advances the understanding of academic writing by highlighting the need to integrate creativity with explicit language instruction. It also reinforces the importance of balanced writing instruction that combines higher-order thinking skills with linguistic development.

This study also provides implications for lecturers and teacher education programs. Writing instruction should not focus solely on encouraging creativity but should also emphasize grammatical accuracy, vocabulary development, and organization of ideas. By integrating creativity with structured writing instruction, preservice teachers can improve their academic writing ability more effectively. In addition, teacher education programs are encouraged to support the development of 21st-century skills alongside linguistic competence to better prepare future teachers.

Despite its contributions, this study has several limitations that open opportunities for future research. This study examined only creativity as one component of 4C skills and involved participants from a single study program. Future researchers are recommended to investigate other components of 4C skills, such as critical thinking, communication, and collaboration, to obtain a more comprehensive understanding of factors influencing writing performance. Future studies may also involve larger samples and use more comprehensive instruments to measure creativity and writing performance. By addressing these areas, further research can provide deeper insights into the role of 21st-century skills in academic writing development among preservice teachers in the EFL context.

These findings also indicate that teacher education programs should provide learning environments that encourage both creative thinking and explicit language instruction. By doing so, preservice teachers can develop the ability to generate ideas while maintaining accuracy and coherence in their writing. Furthermore, the results of this study may serve as a reference for lecturers in designing writing activities that integrate creativity with academic

writing conventions. Ultimately, strengthening both creativity and linguistic competence is essential to prepare preservice teachers for effective academic and professional communication in the EFL context.

REFERENCES

Ahmed, K. (2018). Teaching Critical Thinking and Writing in Higher Education: An Action Research Project Teacher Education Advancement. *Network Journal Cumbria*, *10*(1), 74–84.

Aldossary, K. S., Society, A., & Studies, L. (2021). *The Impact of Collaborative Writing on EFL Learners ' Writing Development : A Longitudinal Classroom-Based Study in Saudi Arabia*.

Apaydın, S., & Güven, S. (2022). Pre-Service Teachers' Evaluations of Creativity in Higher Education. *Educational Policy Analysis and Strategic Research*, *17*(1), 58–87. https://doi.org/10.29329/epasr.2022.248.4

Ariffin, A., & Abdi, B. M. (2020). The relationship between collocation competence and writing skills of EFL learners. *AJELP: The Asian Journal of English Language and Pedagogy*, *8*(1), 41–52. https://doi.org/10.37134/ajelp.vol8.1.5.2020

Astuti, A. P., Aziz, A., Sumarti, S. S., & Bharati, D. A. L. (2019). Preparing 21st Century Teachers: Implementation of 4C Character's Pre-Service Teacher through Teaching Practice. *Journal of Physics: Conference Series*, *1233*(1). https://doi.org/10.1088/1742-6596/1233/1/012109

Chen, M. R. A., & Hwang, G. J. (2020). Effects of a concept mapping-based flipped learning approach on EFL students' English speaking performance, critical thinking awareness and speaking anxiety. *British Journal of Educational Technology*, *51*(3), 817–834. https://doi.org/10.1111/bjet.12887

Creswell. (2014). Research Design qualitative, quantitative and mixed metods approaches 2014. In *SAGE Publications, Inc* (4th Editio).

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development (A report prepared for the Learning Policy Institute.)*. *June*.

Facione, P. A. (2015). Critical Thinking: What It Is and Why It Counts. Insight Assessment. *Insight Assessment*, *5*(1), 1–23.

Fareed, M., Ashraf, A., & Bilal, M. (2016). ESL Learners' Writing Skills: Problems, Factors and Suggestions. *Journal of Education & Social Sciences*, *4*(2), 83–94. https://doi.org/10.20547/jess0421604201

Flores, M. A. (2020). Feeling like a student but thinking like a teacher: a study of the development of professional identity in initial teacher education. *Journal of Education for Teaching*, *46*(2), 145–158. https://doi.org/10.1080/02607476.2020.1724659

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). HOW TO DESIGN AND EVALUATE RESEARCH IN EDUCATION. In *ペインクリニック学会治療指針２*.

Gümüş, A. (2022). *Twenty-First-Century Teacher Competencies and Trends in Teacher Training*. 243–267. https://doi.org/10.1007/978-981-16-9640-4_11

Halpern, D. F. (2019). Thought and Knowledge An Introduction to Critical Thinking. In *ペインクリニック学会治療指針２*.

Hamilton, M., & Pitt, K. (2016). *Creativity in academic writing*.

Hasfira, H., Ayu, C., & Hardi, V. A. (2024). An Analysis on Students' Creative Thinking Ability in Writing Narrative Paragraph. *Journal of Education Research*, *5*(1), 240–247. https://doi.org/10.37985/jer.v5i1.854

Henriksen, D., Richardson, C., & Mehta, R. (2017). Design thinking: A creative approach to educational problems of practice. *Thinking Skills and Creativity*, *26*(October), 140–153. https://doi.org/10.1016/j.tsc.2017.10.001

Hiver, P., Mercer, S., & Al-Hoorie, A. H. (2020). Student Engagement in the Language Classroom. *Student Engagement in the Language Classroom*, 1–300. https://doi.org/10.21832/HIVER3606Hyland, K. (n.d.). *Second Language Writing*.

Hyland, K. (2016). *Book review Teaching and Researching writing*. *writing*, 314.

Imaniar, F., Pratama, R., Lestari, L., & Munir, A. (2024). Critical Thinking in the Teaching of EFL Academic Writing. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, *12*(2), 995–1012. https://doi.org/10.24256/ideas.v12i2.5165

Jahan, M. (2024). Assessing core competencies of pre-service teachers in the context of 21st Century Skills. *Journal of Teachers and Teacher Education*, *1*(1), 08–11. https://doi.org/10.33545/30810647.2024.v1.i1.a.2

Johnson, R. T. (n.d.). *We are IntechOpen , the world ' s leading publisher of Open Access books Built by scientists , for scientists TOP 1 % Learning*.

Mukaka, M. M. (2012). Statistics corner: A guide to appropriate use of correlation coefficient in medical research. *Malawi Medical Journal*, *24*(3), 69–71.

Richards, J. C., & Renandya, W. A. (2010). Methodology in Language Teaching An Anthopology of Current Practice. *An Anthopology of Current Practice*, 1–62.

Richards, J. C. (2014). *CREATIVITY IN LANGUAGE TEACHING*. 1–21.

Riswanto, R. (2021). Cohesion and coherence of EFL students' essay writing. *JPGI (Jurnal Penelitian Guru Indonesia)*, *6*(3), 850. https://doi.org/10.29210/021971jpgi0005

Robert J. Sternberg. (2006). The Nature of Creativity Robert. *Creativity Research Journal*, *18*(1), 87–98. https://doi.org/10.1207/s15326934crj1801

Sawyer, K. (2017). Creativity Research and Cultural Context: Past, Present, and Future. *The Journal of Creative Behavior*, *51*, 352–354. https://doi.org/10.1002/jocb.204

Starko, A. J. (2013). Creativity in the classroom: Schools of curious delight: 5th edition. In *Creativity in the Classroom: Schools of Curious Delight: 5*. https://doi.org/10.4324/9780203115176

Sulistyo, T., Widiastuti, O., Mafulah, S., Puspitasari, Y., & Holland, T. (2023). Online Feedback in Interactive Blogging: Cultivating Students' Writing Performance and Learning Engagement. *JEELS (Journal of English Education and Linguistics Studies)*, *10*(2), 263–283. https://doi.org/10.30762/jeels.v10i2.1099

Tin, T. B. (2023). *Exploring idea generation and development : a new view on creativity in second language*.

Trilling, B., & Fadel, C. (n.d.). *21st century skills*.

Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2015). Teacher collaboration: A systematic review. *Educational Research Review*, *15*, 17–40. https://doi.org/10.1016/j.edurev.2015.04.002

Wallach, M. A., & Torrance, E. P. (1968). Torrance Tests of Creative Thinking: Norms -- Technical Manual. *American Educational Research Journal*, *5*(2), 272. https://doi.org/10.2307/1161826

Wang, Y., Kasuma, S. A. B. A., Lah, S. B. C., & Zhang, Q. (2024). Exploring the relationship between EFL students' writing performance and activity theory related influencing factors in the blended learning context. *PLoS ONE*, *19*(6), 1–20. https://doi.org/10.1371/journal.pone.0305668

Zeichner, K. (2022). Preparing Teachers to Teach Successfully in Schools in Historically Marginalized Communities. *Márgenes Revista de Educación de La Universidad de Málaga*, *3*(3), 83–97. https://doi.org/10.24310/mgnmar.v3i3.15343