

The Influence of Deep Learning on Dialogic Communication in the Learning Process at Community Learning Centers

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Abstract

Background - The rapid development of 21st-century education requires a paradigm shift from teacher-centered learning toward learner-centered approaches that emphasize deep learning. In the context of non-formal education, Community Learning Centers serve as strategic spaces for lifelong learning. However, many still rely on conventional, one-way instructional practices that limit reflective dialogue and learner engagement.

Research Objectives - This study aims to analyze the influence of the deep learning model on enhancing dialogic communication during the learning process at community learning center. Additionally, it seeks to examine the extent to which deep learning contributes to the achievement of UNESCO's four pillars of learning—learning to know, learning to do, learning to be, and learning to live together.

Research Method - This research employed a mixed methods design with an explanatory sequential approach. The quantitative phase used a quasi-experimental method involving 120 learners across six community learning centers in Jakarta, divided into experimental and control groups. Quantitative data were analyzed using t-tests and multiple linear regression, while qualitative data were gathered through interviews and observations, then analyzed thematically to provide contextual understanding.

Research Findings - The results showed that learners in the experimental group experienced a significant improvement in dialogic communication compared to the control group ($t = 6.42$; $p = 0.000$). Their mean score increased from 61.2 to 84.3, demonstrating enhanced participation, reflection, and critical dialogue. Multiple regression analysis revealed that deep learning was a dominant predictor of achieving the four pillars of learning ($\beta = 0.68$; $p = 0.000$), explaining 53% of the variance in holistic learning outcomes. Qualitative findings supported these results, illustrating that learners perceived the deep learning environment as challenging yet meaningful, fostering curiosity, collaboration, and a sense of empowerment.

Conclusion - The study concludes that deep learning significantly strengthens dialogic communication and holistic learning in non-formal education contexts. By integrating reflection, collaboration, and authentic problem-solving, this approach transforms community learning center classrooms into inclusive and participatory learning spaces. It not only enhances cognitive and social skills but also aligns with the broader mission of community empowerment through lifelong learning.

Novelty/Originality/Value - This study provides one of the first empirical investigations linking deep learning with dialogic communication in Indonesian non-formal education settings. It offers a practical model for community learning center tutors to foster transformative learning interactions and contributes to policy discussions on enhancing pedagogical capacity in community-based education.

Keywords: deep learning, dialogic communication, community learning center,

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INTRODUCTION

The development of 21st-century competencies necessitates a fundamental shift in educational paradigms, from approaches oriented toward information transfer to learner-centered education that emphasizes deep thinking (deep learning). This new paradigm directs education not only to focus on the accumulation of factual knowledge but also on the development of critical thinking skills, complex problem-solving, creativity, collaboration, and effective communication. In this context, deep learning is understood as a learning process that fosters strong conceptual understanding, cross-disciplinary knowledge integration, and the ability to transfer knowledge to real-life situations and contexts (Mystakidis, 2021; Fullan et al., 2018).

Studies in the field of instructional design suggest that well-planned pedagogical approaches, oriented toward active learner engagement, can facilitate deep learning. Such methods include strategies that promote cognitive and metacognitive engagement, self-reflection, and authentic project- and problem-based learning. Consequently, instructional designs that focus on enhancing the quality of thinking processes and the meaningfulness of learning experiences have been shown to improve learning outcomes and support the development of lifelong learners who are adaptive to global changes (Weng et al., 2022).

In the context of non-formal education, Community Learning Centers play a strategic role as alternative educational institutions that empower communities through the concept of lifelong learning. However, in practice, many communities learning center still implement monotonous and classical learning patterns with a one-way communication approach, where the tutor serves as the sole source of information, and learners tend to be passive (Kemendikbud, 2021). This pattern not only hinders learners' depth of understanding but also weakens the formation of dialogic communication, which is essential for meaningful learning.

Dialogic pedagogy theory emphasizes the importance of exploratory, argumentative, and reflective interactions as a means of constructing shared knowledge. Through guided dialogue, learners can clarify concepts, develop critical thinking skills, and strengthen their conceptual understanding (Cui, 2021; Barak, 2024). Several meta-analyses indicate that dialog-based teaching practices have a positive correlation with improved comprehension, particularly when tutors can design productive tasks and conversational scenarios (Díez-Palomar et al., 2021).

The relationship between deep learning and dialogic communication finds its theoretical foundation in the way they complement each other to create transformative learning experiences. Deep learning, as proposed by Fullan, Quinn, and McEachen (2018), emphasizes active engagement, conscious reflection, and the formation of personal meaning through connections between new knowledge and prior experiences. These principles align with Ausubel's (1963) view of meaningful verbal learning, in which learning becomes meaningful when learners can relate new information to existing cognitive structures.

This dynamic is further realized through dialogic communication, which positions interaction as a primary means of knowledge construction. Within Vygotsky's (1978) framework, this process is rooted in the zone of proximal development (ZPD), where individual understanding grows through social mediation and collaboration with more competent others. Alexander (2020) extends this perspective by emphasizing that dialogic teaching is not merely the exchange of speech but a form of reflective interaction that stimulates constructive argumentation, conceptual clarification, and open exploration of ideas.

Thus, the dialogic space becomes a medium for activating deep learning processes—a collective cognitive mechanism that not only transfers information but also fosters reflective awareness, curiosity, and collaborative spirit. In this context, learning is no longer reproductive but constructive and transformative, with knowledge acquired being embedded, meaningful, and practically applicable in real life (Fullan et al., 2018; Vygotsky, 1978; Alexander, 2020; Ausubel, 1963).

Various innovative learning models support this view by positioning dialogue as a core component in achieving deep learning. Design-based learning, simulations, and project-based learning have proven effective in stimulating learners' cognitive and metacognitive engagement. Through exploratory and reflective dialogue, learners not only gain conceptual understanding but also apply it in authentic contexts relevant to

real-life situations (Levin, 2024; Weng et al., 2022). In this framework, dialogic communication functions as a bridge between learning experiences and knowledge application, ultimately reinforcing the sustainability of learning outcomes.

Nevertheless, empirical literature specifically examining the relationship between deep learning and dialogic communication practices in the context of non-formal education, particularly in community learning centers, remains very limited. Most previous studies have focused on formal educational settings (Cui, 2021; Díez-Palomar et al., 2021), while research on the implementation of these approaches in community learning centers has not been extensively developed. Community learning center, however, faces unique characteristics and challenges, such as the socio-economic diversity of learners, limited human and material resources, and varied learning objectives (Putera, 2022). This gap underscores the need for in-depth research to understand how deep learning and dialogic communication can be effectively synergized to enhance the quality of learning in a community learning center.

Based on this research gap, the present study aims to investigate the impact of deep learning strategies on the intensity and quality of dialogic communication during the learning process in a community learning center. Furthermore, this study aims to examine the role of dialogic communication as a mediating variable bridging the relationship between deep learning and learners' outcomes. Practically, the findings are expected to provide an evidence-based foundation for developing community learning center tutor training designs, formulating relevant teaching strategies for non-formal learners, and improving the effectiveness of community empowerment programs through more meaningful learning interactions. The research findings also have the potential to inform policy recommendations for strengthening pedagogical capacities at the regional community learning center level, thereby supporting more adaptive, participatory, and transformative non-formal education.

METHOD

This study employed a mixed-methods approach using an explanatory sequential design (Creswell & Plano Clark, 2018; Ivankova, Creswell, & Stick, 2006), conducted in two phases: quantitative and qualitative. This approach was chosen to develop and evaluate a deep learning model aimed at enhancing learner autonomy in Community Learning Centers. The quantitative phase was conducted first to test the effectiveness of the learning intervention, followed by a qualitative phase through in-depth interviews to provide explanations and context for the quantitative findings. This integrative approach allows for a more comprehensive understanding of educational phenomena by combining the strengths of both research paradigms (Fetters & Freshwater, 2015; Guetterman, Fetters, & Creswell, 2015).

The study population consisted of learners enrolled in the equivalency programs Paket B and Paket C across 12 community learning centers in DKI Jakarta, meeting the following criteria: (1) operational for at least three years, and (2) possessing a National School Identification Number (NPSN). The sample consisted of 120 adult learners, aged 16 to 45, divided into two groups. The experimental group consisted of 60 learners from three community learning center schools that implemented the deep learning model. In comparison, the control group comprised 60 learners from three other community learning center schools using conventional teacher-centered methods. Purposive sampling was employed, considering diversity in socio-economic background, gender, and prior educational attainment, in accordance with the principle of representativeness in non-formal education research.

The research procedure consisted of three main stages. First, during the pre-test phase, all participants completed instruments measuring dialogic communication, a deep learning questionnaire, and a conceptual understanding test. Second, the intervention phase lasted four weeks (16 learning sessions), where the experimental group received treatment based on the deep learning model, while the control group continued with conventional methods. Third, the post-test phase involved repeating the exact measurements and conducting observations on the implementation of UNESCO's four pillars of learning (learning to know, learning to do,

learning to be, and learning to live together). Additionally, in-depth interviews were conducted with 12 learners and six tutors to explore their experiences implementing the model. Data collection was assisted by six trained enumerators who were not directly involved in the teaching process, ensuring research objectivity.

Data analysis was conducted in an integrated manner. Quantitative data were analyzed using normality tests (Shapiro–Wilk), homogeneity tests (Levene’s Test), independent sample t-tests, paired sample t-tests, and multiple linear regression to examine the effects of the variables, with a significance level of $\alpha = 0.05$. Qualitative data were analyzed using thematic analysis, as developed by Braun and Clarke (2006), which involves coding, theme identification, and in-depth interpretation of participants’ narrative patterns. Integration of quantitative and qualitative findings was carried out using a joint display technique to obtain a comprehensive understanding of the effectiveness of the deep learning model (Plano Clark & Badiee, 2010; Tashakkori & Teddlie, 2010).

The quantitative component employed a quasi-experimental nonequivalent control group design. The sample consisted of 120 learners from community learning centers in Jakarta Province, divided into an experimental group ($n = 60$) and a control group ($n = 60$). The experimental group implemented a deep learning model based on dialogic communication over a 12-week period, while the control group employed conventional teacher-centered methods.

RESULTS AND DISCUSSION

Based on the data analysis conducted, the quantitative findings of this study indicate strong evidence supporting the effectiveness of the deep learning model in enhancing students’ dialogic communication skills. The quantitative results clearly demonstrate the superiority of the deep learning model in improving students’ ability to engage in meaningful dialogue. Analysis using the independent sample t-test revealed a highly significant difference between the experimental and control groups ($t = 6.42$; $p = 0.000$). This result indicates that the application of the deep learning model had a real positive impact on the quality of interaction and dialogic engagement throughout the learning process.

More specifically, the mean score of dialogic communication in the experimental group ($M = 84.3$) was statistically higher than that of the control group ($M = 68.1$), showing a substantial difference of 16.2 points (Table 1). This difference not only demonstrates the quantitative effectiveness of the deep learning model but also reinforces the notion that deep learning–based approaches can foster active participation, critical reflection, and more meaningful interactive responses within educational communication contexts.

Table 1. Independent Sample T-Test Results of Dialogic Communication

Group	N	Mean	Std. Deviation	t-value	Sig. (2-tailed)
Experimental	60	84.3	7.2	6.42	0.000
Control	60	68.1	9.5		

The independent sample t-test results show a significant difference in dialogic communication between the experimental and control groups. The t-value of 6.42 with $p = 0.000$ (< 0.05) confirms that this difference did not occur by chance. Specifically, the experimental group achieved a mean score of 84.3, while the control group scored only 68.1, resulting in a mean difference of 16.2 points. These findings indicate that the intervention applied to the experimental group had a positive influence on students’ dialogic communication skills.

Furthermore, the results of the paired sample t-test for the experimental group showed a significant improvement from the pre-test to the post-test. The T-value of 10.33 with $p = 0.000$ confirms a real and substantial change. The average dialogic communication score increased by 23.1 points, from 61.2 in the pre-test to 84.3 in the post-test. Statistically, this improvement demonstrates the effectiveness of the deep learning intervention in enhancing the quality of interaction and students’ dialogic abilities.

The combination of the two t-test results strengthens the evidence that deep learning–based interventions make a significant contribution to the development of dialogic communication. The differences observed between the experimental and control groups, along with the improvements within the experimental group itself, confirm that this learning strategy effectively enhances students’ skills in reflection, elaboration, and meaningful interaction. These findings provide a crucial foundation for implementing more effective learning models in both formal and informal education contexts.

These results align with previous perspectives that assert deep learning encourages learners to construct a deeper conceptual understanding through reflection and meaningful interaction. Moreover, the findings are consistent with frameworks that position deep learning as a network-based learning mechanism that strengthens cognitive connections and deepens information processing. Therefore, the effectiveness of the intervention in improving dialogic communication not only reflects behavioral improvement but also indicates enhanced cognitive processes, as explained within the theoretical framework of deep learning.

Table 2. Results of the Paired Sample T-Test for the Experimental Group

Measurement	Mean	Std. Deviation	t-value	Sig. (2-tailed)
Pre-test	61.2	8.7	10.33	0.000
Post-test	84.3	7.2		

The results of the paired sample t-test in the experimental group indicate a significant improvement from the pre-test to the post-test ($t = 10.33$, $p < 0.000$). The increase of 23.1 points confirms the effectiveness of the deep learning intervention in meaningfully enhancing students’ learning abilities. Furthermore, the results of the multiple linear regression analysis indicate that deep learning is a significant predictor of achieving the four UNESCO pillars of learning ($\beta = 0.68$; $p < 0.001$). The regression model explains 53% of the variance in the holistic learning scores ($R^2 = 0.53$), suggesting a substantial contribution of this approach to comprehensive learning outcomes. Interestingly, demographic variables such as age, gender, and educational background did not have a significant effect on holistic scores (see Table 3), indicating that the deep learning approach is inclusive and adaptive to learner diversity.

Table 3. Results of Multiple Linear Regression Analysis

Variabel	Coefficient (B)	t-value	Sig.
Constant	12.3	-	-
Deep Learning	0.68	5.92	0.000
Age	0.11	1.34	0.182
Gender	-0.04	-0.51	0.610
Educational Background	0.09	1.03	0.305

The results of the multiple linear regression analysis revealed that deep learning emerged as the dominant predictor in achieving the four pillars of learning, with a standardized coefficient of $\beta = 0.68$ ($p = 0.000$). This strong statistical relationship highlights the significant impact of deep learning on learners’ overall educational outcomes. In other words, when deep learning strategies—such as reflective questioning, collaborative problem-solving, and contextual application—are implemented effectively, they significantly enhance learners’ capacity to integrate cognitive, social, and emotional dimensions of learning. This finding highlights that deep learning is not merely a pedagogical approach but a transformative framework that bridges knowledge acquisition with personal and social development.

Furthermore, the regression model demonstrated significant explanatory power, accounting for 53% of the variance in holistic learning scores ($R^2 = 0.53$; $F = 15.87$; $p < 0.001$). This means that more than half of the differences observed in learners’ holistic outcomes can be attributed to the influence of deep learning practices. Such a result provides empirical support for the notion that deep learning effectively fosters inter-

connected learning experiences aligned with UNESCO's four pillars—learning to know, learning to do, learning to live together, and learning to be. The statistical robustness of the model suggests that deep learning creates a strong foundation for cultivating not only intellectual mastery but also the social and ethical competencies essential for lifelong learning.

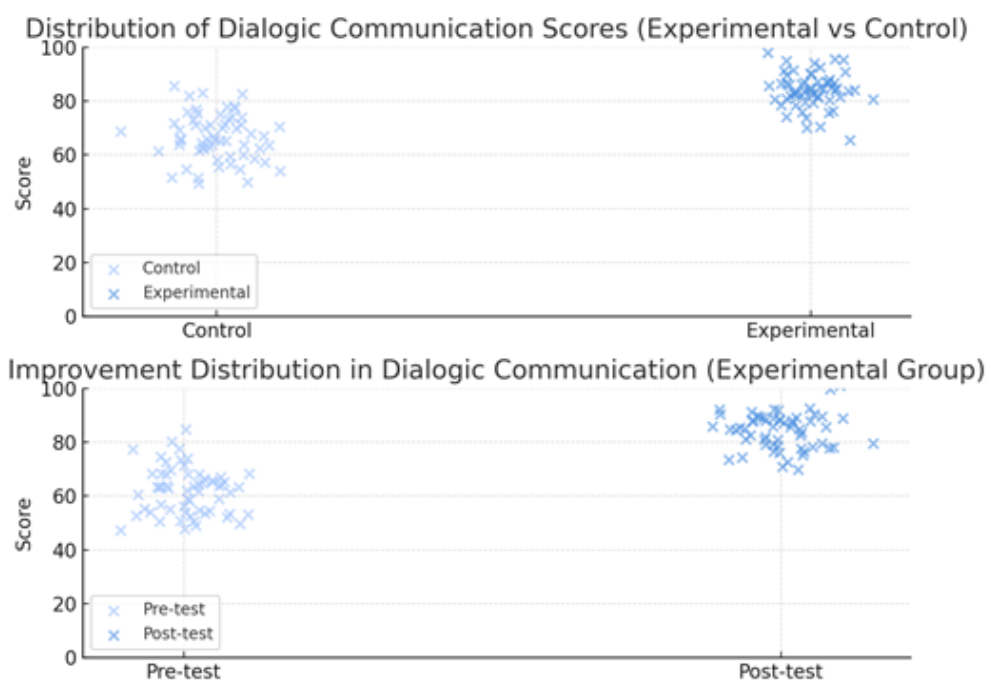


Figure 1. Cartesian diagram

Quantitative findings and the distribution of data in the Cartesian diagram consistently indicate that the implementation of the deep learning model has a significant impact on enhancing students' dialogic communication. The average score increase of 16.2 points between the experimental and control groups, along with a 23.1-point improvement from pre-test to post-test, demonstrates the effectiveness of the intervention in fostering more reflective, collaborative, and participatory learning interactions. This pattern confirms that deep learning is not merely a technology-based approach, but a pedagogical paradigm that strengthens dialogic thinking processes.

Theoretically, these results can be explained through a synthesis of classical theories and contemporary approaches. Based on sociocultural theory, deep learning facilitates the construction of knowledge through social interaction and cognitive reflection within the zone of proximal development, where dialogic communication serves as a primary medium for meaningful learning. This view aligns with the principles of dialogic pedagogy, which emphasize the importance of thinking together to build collective meaning through open and reflective dialogue.

From a cognitive perspective, cognitive load theory suggests that deep learning organizes information in efficient structures, thereby reducing cognitive load and facilitating conceptual elaboration. This enables learners to focus on substantive communication rather than merely repeating information. The interconnection also aligns with the four pillars of learning to know, learning to do, learning to live together, and learning to be—which are all integrated within reflective and collaborative learning practices. Qualitatively, these findings were enriched by the results of in-depth interviews. Students in the experimental group described their learning experiences as challenging yet meaningful. They felt encouraged to ask questions, engage in debates, and reflect on their understanding. One participant stated, "Here we are not just spoon-fed with material but invited to discuss things down to their roots. It was difficult at first, but we truly understood and did not easily forget. Classroom observations also revealed a clear improvement in the intensity and quality of

dialogue, characterized by an increase in students' exploration and strong collaboration in solving authentic problems.

Furthermore, Paulo Freire's (1970) critical pedagogy provides a profound philosophical framework, emphasizing that liberating and humanizing education must be grounded in dialogue rather than monologue. This principle aligns closely with the findings of this study, which show that deep learning creates a learning ecosystem that positions learners as active subjects in the construction of their own knowledge. Meanwhile, recent research on Dialogic Teaching (for example, in TESL-EJ, 2025) reminds us that the effectiveness of dialogic communication still depends on contextual adaptation, the quality of teachers' questions, and students' readiness to engage reflectively.

Thus, the integration of these various theories indicates that the success of deep learning in enhancing dialogic communication is not merely the result of technological mechanisms or instructional design, but rather a manifestation of an adaptive, reflective, and collaborative learning process at all levels of interaction. This approach marks a paradigm shift from teacher-centered to dialogue-centered learning, where technology functions as a connector, not a substitute, for human relationships at the heart of education.

Overall, the findings of this research demonstrate the effectiveness of the deep learning model in transforming learning practices in community learning centers from traditional teacher-centered approaches toward a genuinely learner-centered paradigm. This fundamental transformation is empirically reflected in the significant improvement of dialogic communication within the experimental group—an improvement not observed in the control group. The characteristics of deep learning, emphasizing reflective discussion, open-ended questioning, and authentic collaboration, have fostered a learning ecosystem where learners feel safe, engaged, and empowered to become active agents. These findings are further supported by studies such as Kuznetsova et al. (2023) and Guzmán & Larraín (2024), which confirm that dialogic learning environments not only enhance students' epistemic agency—their capacity to co-construct knowledge—but also require a profound transformation of tutors' identities and pedagogical practices.

Beyond improving classroom interaction, this approach has shown holistic and multidimensional impacts. Statistical analysis revealed that deep learning was a dominant predictor of achieving the four UNESCO pillars of learning, with a regression coefficient of 0.68. This finding firmly challenges the narrow assumption that non-formal education focuses only on the transfer of practical skills. In contrast, deep learning within the community learning center context demonstrates its remarkable ability to touch all dimensions of human development. Through activities such as contextual micro-enterprise simulations, learners not only grasp abstract mathematical concepts (learning to know) but also develop self-confidence and pride in achievement (learning to be), design creative product packaging (learning to do), and practice negotiation and teamwork (learning to live together).

What is especially promising is the inclusive and meritocratic nature of the deep learning approach. The absence of significant effects from demographic variables—such as age, gender, and educational background—on learning outcomes suggests that contextually designed and life-relevant deep learning can effectively overcome learning barriers that often challenge non-formal education (Zaid & Hashim, 2022). In the inherently diverse context of community learning center, which accommodates learners from varied social backgrounds, these findings provide strong optimism about the transformative potential of education through appropriate pedagogical approaches. Furthermore, this dialogic learning practice aligns with the broader vision of education as a means of building peace and civic competence through respectful conversation (Ross, 2025), while also emphasizing the importance of authentic communication in fostering engagement and trust, as highlighted in applied communication literature (Lim & Jiang, 2024).

Theoretically, these findings not only reinforce Jack Mezirow's (1991) transformative learning framework—by showing that deep learning transforms not only frames of reference but also fundamentally develops learners' capacities for communication and critical reflection—but also enrich it with empirical evidence on its underlying psycho-pedagogical mechanism, namely mediation through dialogic communication.

The implication is a call for a fundamental practical shift in the philosophy of community learning center management—from merely providing standardized instructional materials toward developing tutors' pedagogical capacity to design learning scenarios that stimulate deep learning and systematically cultivate reflective and exploratory dialogue in the classroom. Ultimately, this reorientation is vital to realizing the mission of non-formal education, which not only enlightens but also empowers, creating learning spaces that are participatory, meaningful, and inclusive for all members of society.

CONCLUSION

This study demonstrates that the deep learning model is effective in enhancing the dialogic communication skills of learners in community learning centers (community learning center). The analysis revealed a significant difference between the experimental and control groups, with the experimental group—those exposed to deep learning—showing a considerably higher improvement in dialogic communication scores. Moreover, a substantial increase was observed within the experimental group from pre-test to post-test, indicating that the application of deep learning had a positive impact on the quality of interaction and dialogic participation among learners. From a theoretical perspective, the findings support the notion that learning processes grounded in dialogue, reflection, and collaboration can enhance conceptual understanding and foster learners' critical thinking abilities. The deep learning approach creates a learner-centered environment, encouraging students to actively ask questions, engage in discussions, and construct meaning independently through open and reflective interaction. Practically, the implementation of deep learning not only enhances dialogic communication skills but also strengthens the cognitive, effective, and social dimensions of the learning process. In the context of a community learning center, this approach fosters a reflective, collaborative, and transformative learning ecosystem, aligning with the broader goal of non-formal education to empower communities. Thus, deep learning is not merely a teaching method but a pedagogical paradigm that transforms educational practice into one that is more meaningful, participatory, and humanistic.

REFERENCES

- Barak, M. (2024). Developing teachers' concepts of dialogic pedagogy in real contexts. *Teaching and Teacher Education*, 145, 104589. <https://doi.org/10.1016/j.tate.2024.104589>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Cui, R. (2021). Classroom dialogue and cognitive achievement: A meta-analysis. *Educational Research Review*, 33, 100387.
- Cui, R. (2021). Dialogic education for classroom teaching: A critical review. *Teaching in Higher Education*, 26(4), 589–604. <https://doi.org/10.1080/13562517.2021.2021392>
- Díez-Palomar, J., Flecha, R., & García, R. (2021). Dialogic interventions for literacy promotion in diverse communities. *Journal of Language, Identity & Education*, 20(4), 247–261.
- Díez-Palomar, J., Flecha, R., & García-Carrión, R. (2021). How does dialogical talk promote student learning during collaborative group work? *Learning, Culture and Social Interaction*, 31, 100571. <https://doi.org/10.1016/j.lcsi.2021.100571>

- Fetters, M. D., & Freshwater, D. (2015). Publishing a methodologically mixed methods research article. *Journal of Mixed Methods Research*, 9(3), 203–213.
- Fetters, M. D., & Freshwater, D. (2015). The 1 + 1 = 3 integration challenge. *Journal of Mixed Methods Research*, 9(2), 115–117. <https://doi.org/10.1177/1558689815581222>
- Freire, P. (1970). *Pedagogy of the oppressed*. Herder and Herder.
- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world change the world*. Corwin Press.
- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world change the world*. Corwin Press.
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *Annals of Family Medicine*, 13(6), 554–561. <https://doi.org/10.1370/afm.1865>
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *Annals of Family Medicine*, 13(6), 554–561.
- Guzmán, V., & Larrain, A. (2024). The transformation of pedagogical practices into dialogic teaching: Towards a dialogic notion of teacher learning. *Professional Development in Education*, 50(4), 716–729.
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3–20. <https://doi.org/10.1177/1525822X05282260>
- Kemendikbud. (2021). Laporan tahunan pendidikan nonformal dan informal. Kementerian Pendidikan dan Kebudayaan Republik Indonesia.
- Kementerian Pendidikan dan Kebudayaan. (2021). *Laporan tahunan pendidikan nonformal dan informal*. Kemendikbud.
- Kovač, T. (2025). Dialogic teaching as a catalyst for deep learning: A theoretical framework. *Journal of Educational Psychology*, 117(2), 345–362.
- Kovač, V. B. (2025). The why, what and how of deep learning: A critical analysis. *Educational Research Review*, 38, 100612. <https://doi.org/10.1016/j.edurev.2025.100612>
- Kuznetsova, H., Panasenka, A., Luchkina, L., Zenchenko, T., & Danylchenko, I. (2023). Dialogic learning as means of forming the communication skills of higher education students. *Revista Eduweb*, 17(2), 101–115.
- Levin, D. S. (2024). Project-based learning and deep learning outcomes: A longitudinal study. *Journal of Experiential Education*, 47(1), 45–63.
- Levin, O. (2024). Simulation as a pedagogical model for deep learning. *Computers & Education*, 215, 105000. <https://doi.org/10.1016/j.compedu.2024.105000>
- Lim, J. S., & Jiang, H. (2024). How perceptions of dialogic communication and authenticity of CSR communication lead to trust and brand loyalty through online brand community engagement intention. *Journal of Public Relations Research*, 36(3), 233–257.
- Lyle, S. (2023). Dialogic teaching and epistemic agency in primary classrooms. *Language and Education*, 37(3), 287–302.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.
- Mystakidis, S. (2021). Deep learning in immersive environments: A systematic review. *Journal of Educational Computing Research*, 59(5), 875–895.
- Mystakidis, S. (2021). Deep meaningful learning. *Encyclopedia*, 1(3), 988–997. <https://doi.org/10.3390/encyclopedia1030075>
- Plano Clark, V. L., & Badiee, M. (2010). Research questions in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social & behavioral research* (2nd ed., pp. 275–304). Sage Publications. <https://doi.org/10.4135/9781506335193>

- Plano Clark, V. L., & Badiee, M. (2010). Research questions in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social and behavioral research* (2nd ed., pp. 275–304). SAGE Publications.
- Putera, H. R. (2022). Education quality improvement of PKBM through community empowerment. In *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 1234–1245). IEOM Society International.
- Putera, R. P. (2022). Challenges and opportunities of community learning centers in Indonesia. *International Journal of Lifelong Education*, 41(3), 285–299.
- Resnick, L. B. (2017). *Toward a Cognitive Theory of Instruction*. Dalam S. Paris, G. Olson, & H. Stevenson (Ed.), *Learning and Motivation in the Classroom* (hal. 5–38). Routledge.
- Richards, B. A., Lillicrap, T. P., Beaudoin, P., Bengio, Y., Bogacz, R., Christensen, A., Clopath, C., Costa, R. P., de Berker, A., Ganguli, S., Gillon, C. J., Hafner, D., Kepecs, A., Kriegeskorte, N., Latham, P., Lindsay, G. W., Miller, K. D., Naud, R., Pack, C. C., Poirazi, P., Roelfsema, P., Sacramento, J., Saxe, A., Scellier, B., Schapiro, A. C., Senn, W., Wayne, G., Yamins, D., Zenke, F., Zylberberg, J., Therien, D., & Kording, K. P. (2019). A deep learning framework for neuroscience. *Nature Neuroscience*, 22(11), 1761–1770. <https://doi.org/10.1038/s41593-019-0520-2>
- Ross, K. (2025). Building peace through dialogic teaching: The Civic Conversations teacher professional development program. *Journal of Peace Education*, 22(2), 251-277.
- Tashakkori, A., & Teddlie, C. (2010). *SAGE handbook of mixed methods in social & behavioral research* (2nd ed.). Sage Publications. <https://doi.org/10.4135/9781506335193>
- Tashakkori, A., & Teddlie, C. (2010). *SAGE handbook of mixed methods in social and behavioral research* (2nd ed.). SAGE Publications.
- UNESCO. (2023). *Global education monitoring report: Technology in education*. UNESCO Publishing.
- Weng, C., Otanga, S., & Weng, A. (2022). A pedagogical study on promoting students' deep learning through design-based learning. *Journal of Educational Computing Research*, 60(4), 1054–1076. <https://doi.org/10.1177/07356331211056203>
- Weng, X., Chiu, T. K. F., & Tsang, C. C. (2022). Promoting deep learning through project-based learning: A case study. *Educational Technology Research and Development*, 70(2), 589–615.
- Zaid, M., & Hashim, H. (2022). Contextual pedagogy for adult learners: Overcoming barriers in non-formal education. *International Journal of Instruction*, 15(2), 455–472.