



DEVELOPMENT OF A PESANTREN-BASED ETHNOPEDAGOGICAL LEARNING MODEL TO ENHANCE STUDENTS' CRITICAL THINKING SKILLS AND LEARNING INDEPENDENCE

Syamsudin^{1*}, Wahono Widodo², Endang Susantini³

^{1,2,3}Universitas Negeri Surabaya, Surabaya, Indonesia

¹Institut Al Fithrah Surabaya, Surabaya, Indonesia

*Correspondence email: syamsudin@alfithrah.ac.id

ABSTRACT

Learning should provide students with opportunities to actively construct knowledge through their own cognitive processes. To achieve meaningful understanding and application, students should be encouraged to engage in problem solving, make independent discoveries, and develop their own ideas. This study aimed to develop a pesantren-based ethnopedagogical learning model that is valid, practical, and effective in improving university students' critical thinking skills and learning independence. The study employed a Research and Development (R&D) approach using the Four-D (4D) model consisting of the define, design, develop, and disseminate stages. Data were analyzed using descriptive quantitative and qualitative techniques. The results indicated that the developed model achieved very high validity, including content validity (3.86), construct validity (3.87), Semester Learning Plan validity (3.86), teaching material validity (3.83), Student Worksheet validity (3.91), and critical thinking assessment validity (3.83). These findings demonstrate that the pesantren-based ethnopedagogical learning model is highly feasible for implementation and has strong potential to foster students' critical thinking skills and learning independence within Islamic higher education contexts.

Keywords: Pesantren's Ethnopedagogy; Islamic boarding schools (*pesantren*); Critical thinking skills; Independence learning

INTRODUCTION

Education is one of the most important factors in human resource development. It provides individuals with access to the knowledge, skills, and values necessary to address the challenges of the modern world and contribute to sustainable societal development (Pare et al., 2023; Rambung et al., 2023; Care et al., 2014). Furthermore, education enhances a nation's global competitiveness by developing competent human resources, fostering innovation, and increasing productivity. Higher education institutions serve as strategic environments where students can engage in innovative, challenging, and diverse learning experiences. In the context of twenty-first-century education and the Industrial Revolution 4.0, learning is expected to cultivate four essential competencies: Communication, Collaboration, Critical Thinking, and Creativity, collectively known as the 4Cs (Arnyana, 2019).

Among these competencies, critical thinking has become a central focus of educational development due to its significant role in preparing students to navigate increasingly complex social, economic, and technological environments. Contemporary higher education is therefore expected not only to facilitate knowledge acquisition but also to equip students with the ability to analyze information critically, evaluate evidence, make reasoned judgments, and solve complex problems effectively. Consequently, universities are challenged to design learning environments that actively promote the development of higher-order thinking skills while simultaneously fostering students' capacity for lifelong learning and adaptability in a rapidly changing world.

Critical thinking, as one of the core competencies required in the twenty-first century, continues to be a major focus of educational development. Higher-order thinking skills contribute significantly to students' academic achievement, employability, and long-term professional success (Hart et al., 2021). In particular, critical thinking enables individuals to analyze information systematically, evaluate evidence objectively, and make informed decisions when addressing complex problems encountered in both academic and everyday contexts (Facione, 2020; Dwyer et al., 2014; Butler et al., 2017). Therefore, fostering critical thinking skills has become a fundamental objective of higher education institutions worldwide.

University students are expected to function as active learners who continuously engage in the processes of seeking, processing, constructing, and applying knowledge. Within constructivist learning environments, students are not merely passive recipients of information but active participants who generate meaning through interaction with learning experiences and social contexts (Biggs, 1996; Meijer et al., 2023). Contemporary learning paradigms emphasize students' ability to independently access information, critically evaluate multiple sources, and integrate new knowledge with prior understanding to solve authentic problems (Børte et al., 2023). Furthermore, advances in digital technology and information accessibility have increased the importance of students' capacities to effectively utilize knowledge, adapt to changing circumstances, and engage in lifelong learning (Mok & Chiu, 2023).

Based on their age and developmental stage, university students are generally classified as adult learners. Consequently, educational practices in higher education should be guided by the principles of andragogy, a theory of adult learning introduced by Malcolm Knowles (Knowles, 1980). Andragogy emphasizes the unique characteristics of adult learners, including their need for autonomy, self-direction, and active involvement in the learning process.

Unlike children, adult learners possess accumulated experiences that serve as valuable resources for constructing new knowledge and solving real-world problems. The application of andragogical principles is widely recognized as an effective strategy for creating meaningful learning environments that accommodate the diverse needs of adult learners. According to Conaway (2009), andragogy can be understood as both the science and the art of facilitating adult learning by considering learners' psychological, sociological, biological, and legal characteristics. This perspective highlights the importance of designing learning experiences that encourage autonomy, responsibility, and active participation.

Furthermore, contemporary studies suggest that adult learners possess distinctive psychological needs, particularly the desire and capacity to direct their own learning processes (Ally & Wark, 2023). Self-directed learning enables individuals to identify their learning needs, establish learning goals, select appropriate learning strategies, and evaluate their own progress. Therefore, higher education institutions should provide learning environments that support students' independence, critical reflection, and lifelong learning capacities. Such an approach is particularly relevant in the context of twenty-first-century education, where learners are expected to continuously adapt to rapidly changing social, technological, and professional demands.

Preliminary observations conducted by the researchers at Institut Al Fithrah Surabaya revealed that students' critical thinking skills and learning independence remain relatively low. This conclusion was based on several indicators observed during the learning process. First, many students demonstrated limited responsibility toward their academic tasks and learning obligations. Second, punctuality issues were frequently observed, with a considerable number of students arriving late to scheduled classes.

Furthermore, students exhibited weaknesses in several aspects associated with critical thinking and self-directed learning. During classroom discussions, students often deviated from the topic under consideration, resulting in less focused and less productive interactions. Many students also experienced difficulties in formulating relevant questions and expressing well-reasoned opinions. In addition, when confronted with academic or real-life problems, students tended to provide immediate responses based on their existing knowledge without engaging in deeper information-seeking activities or critically examining available evidence. As a result, their responses were often superficial and lacked comprehensive analysis.

These findings indicate that students require learning experiences that not only strengthen their critical thinking skills but also foster greater learning independence. Such learning environments should encourage students to take responsibility for their own learning, actively seek and evaluate information, engage in reflective inquiry, and develop evidence-based solutions to the problems they encounter in both academic and everyday contexts.

According to Yunus (2023), learning in Islamic boarding schools (*pesantren*) continues to rely predominantly on traditional instructional approaches, such as *sorogan* and *halaqah*. These pedagogical traditions have long been regarded as effective means of transmitting religious knowledge, moral values, and character education within the *pesantren* context. Through close interaction between teachers and students,

these approaches facilitate the preservation of Islamic intellectual traditions and the internalization of core pesantren values, including discipline, respect for knowledge, sincerity, and responsibility.

Despite their strengths, the predominance of traditional learning approaches may present challenges when students transition to higher education environments that demand greater autonomy, critical inquiry, and analytical reasoning. Many university learning activities require students to independently seek information, evaluate evidence, formulate arguments, and solve complex problems. However, students whose previous educational experiences were largely characterized by teacher-centered instruction may encounter difficulties in adapting to these expectations. Consequently, some students demonstrate relatively low levels of critical thinking skills and learning independence when entering higher education institutions.

This condition highlights the need for instructional innovations that preserve the positive values and intellectual traditions of pesantren while simultaneously promoting the development of higher-order thinking skills and self-directed learning. Integrating pesantren values into contemporary student-centered learning approaches may provide a promising strategy for bridging the gap between traditional educational practices and the competencies required in twenty-first-century higher education.

Inquiry-based learning has been widely recognized as an effective instructional approach for enhancing students' critical thinking skills and learning independence (Duran & Dökme, 2023; Tawfik & Hung, 2023). Through active investigation, problem exploration, and evidence-based reasoning, inquiry learning encourages students to construct knowledge independently while developing higher-order thinking skills. Furthermore, this approach promotes learner autonomy by requiring students to take responsibility for identifying learning needs, seeking relevant information, and evaluating potential solutions to complex problems.

Despite its advantages, inquiry-based learning also presents several challenges. Effective participation in inquiry activities requires students to possess a certain level of critical thinking ability, self-regulation, and learning independence. Students who lack these foundational competencies may experience difficulties in formulating research questions, generating ideas, identifying relevant information sources, or developing appropriate solutions to the problems under investigation. Consequently, some learners may become frustrated when they are unable to independently construct meaningful responses or discover viable problem-solving strategies (Nugroho & Susilowati, 2023; Azmi & Rahman, 2023).

These limitations suggest that the successful implementation of inquiry-based learning depends not only on the instructional design itself but also on the extent to which students are prepared to engage in independent and reflective learning processes. Therefore, there is a need for instructional models that maintain the strengths of inquiry learning while providing additional scaffolding and contextual support, particularly for students whose critical thinking skills and learning independence are still developing. Such an approach may help students engage more effectively in inquiry activities without experiencing excessive cognitive burden or learning frustration.

Based on the preceding discussion, particularly the analysis of the strengths and limitations of inquiry-based learning, there is a need to develop a more comprehensive instructional model that addresses these shortcomings while preserving the pedagogical benefits of inquiry learning. One potential approach is to integrate the instructional

phases of inquiry-based learning with those of Problem-Based Learning (PBL). Such integration is expected to create a more balanced learning environment that simultaneously promotes critical thinking, problem-solving abilities, and learning independence.

Problem-Based Learning provides a structured framework in which students learn through the exploration and resolution of authentic problems. Within this approach, students continue to experience intellectual challenges; however, the problems are presented in a more systematic and guided manner. Consequently, learners receive sufficient scaffolding to support their reasoning processes, enabling them to engage in critical analysis without experiencing excessive frustration or cognitive overload. The integration of inquiry-based learning and PBL is therefore expected to capitalize on the strengths of both approaches while minimizing their respective limitations.

In addition, the present study incorporates the principles of ethnopedagogy by integrating the cultural values and intellectual traditions of the Islamic boarding school (*pesantren*) into the learning process. Ethnopedagogy emphasizes the utilization of local wisdom as a valuable educational resource capable of creating meaningful, contextual, and culturally responsive learning experiences (Alwasilah et al., 2009; Kartadinata, 2018). Through the integration of *pesantren* values such as responsibility, discipline, independence, mutual consultation (*musyawarah*), and respect for knowledge, the proposed learning model is expected to strengthen both students' character development and academic competencies.

Furthermore, the development of a *pesantren*-based ethnopedagogical learning model aligns with the objectives of the *Merdeka Belajar-Kampus Merdeka* (MBKM) curriculum implemented at Institut Al Fithrah Surabaya. The model encourages students to learn through authentic problem-solving experiences that connect academic concepts with real-life situations. Such learning experiences are expected to enhance students' critical thinking skills, problem-solving abilities, and capacity for reflective decision-making, all of which are essential competencies for adult learners in the twenty-first century.

Moreover, the model is designed to foster learning independence by encouraging students to take responsibility for their own learning processes, actively seek relevant information, evaluate alternative solutions, and engage in self-reflection. Through repeated involvement in inquiry, discussion, and problem-solving activities, students are expected to develop the confidence and self-regulation necessary to become independent lifelong learners capable of adapting to the dynamic demands of contemporary society and professional life.

Therefore, the development of a *Pesantren*-Based Ethnopedagogical Learning Model represents an innovative effort to bridge local cultural wisdom with contemporary educational approaches. By integrating inquiry learning, problem-based learning, and *pesantren* values, the model is expected to provide a culturally relevant and pedagogically robust framework for enhancing students' critical thinking skills and learning independence in higher education.

RESEARCH METHODS

This study employed a Research and Development (R&D) approach. The primary objective of educational development research is to produce a specific educational product and evaluate its validity, practicality, and effectiveness before implementation in broader educational settings. Accordingly, this study aimed to develop a Pesantren-Based Ethnopedagogical Learning Model that meets the criteria of validity, practicality, and effectiveness as proposed by Nieveen et al. (2007), with the ultimate goal of enhancing university students' critical thinking skills and learning independence.

The development process focused not only on the learning model itself but also on the preparation of supporting instructional materials required for its implementation. These learning tools included a Semester Learning Plan (SLP), learning modules, student worksheets, critical thinking assessment instruments, and learning independence observation sheets. The development of these instructional components was intended to ensure consistency between the theoretical foundations of the model, the learning activities implemented in the classroom, and the assessment procedures used to evaluate student learning outcomes.

By integrating ethnopedagogical principles rooted in pesantren traditions with contemporary student-centered learning approaches, the developed model was expected to provide a culturally responsive and pedagogically sound learning environment. Furthermore, the accompanying instructional materials were designed to facilitate the implementation of the model and support the achievement of learning objectives related to critical thinking and self-directed learning.

The quality of the developed model and its supporting instructional materials was evaluated based on three key criteria: validity, practicality, and effectiveness. Validity refers to the extent to which the model is theoretically and pedagogically sound, practicality concerns the ease of implementation in actual learning contexts, and effectiveness relates to the model's ability to improve students' critical thinking skills and learning independence (Nieveen et al., 2007).

Materials and Research Instruments

The materials used in this study consisted of both theoretical and empirical resources that supported the development of the Pesantren-Based Ethnopedagogical Learning Model. Theoretical resources included literature on ethnopedagogy, constructivist learning theory, culturally responsive learning, Islamic boarding school (*pesantren*) education, critical thinking skills, and self-directed learning. In addition, curriculum documents, course learning outcomes, and references related to core pesantren educational values—such as sincerity (*ikhlas*), independence, discipline, responsibility, *musyawarah* (deliberative discussion), and respect for knowledge—were utilized as foundations for model development.

Empirical data were obtained through classroom observations, interviews with lecturers, pesantren administrators, and students, as well as a needs analysis conducted during the preliminary stage of the study. These empirical findings served as the basis for designing and refining the learning model. The final product developed in this research was a Pesantren-Based Ethnopedagogical Learning Model consisting of instructional syntax, implementation guidelines, learning modules, student worksheets, and assessment instruments.

Several research instruments were employed to evaluate the quality and effectiveness of the developed model. These instruments included expert validation sheets, learning implementation observation sheets, student activity observation sheets, student response questionnaires, learning independence observation sheets, interview protocols, and critical thinking skills tests. Collectively, these instruments were used to determine whether the developed learning model met the criteria of validity, practicality, and effectiveness in improving students' critical thinking skills and learning independence.

Expert Validation Sheets

Expert validation sheets were used to assess the feasibility and quality of the developed learning model and its supporting instructional materials. The validation process involved educational experts, curriculum specialists, and pesantren education practitioners who evaluated each component using a structured rating scale. The validation scores provided by the experts were subsequently averaged to determine the overall level of validity.

The validated instructional materials included:

1. Semester Learning Plan (SLP) validation sheet;
2. Student Worksheet validation sheet;
3. Learning module validation sheet; and
4. Learning model validation sheet.

Learning Implementation Observation Sheet

The learning implementation observation sheet was designed to assess the extent to which the Pesantren-Based Ethnopedagogical Learning Model was implemented as intended during classroom instruction. The instrument consisted of a checklist containing "Yes" and "No" response options for each instructional phase. Observers marked "Yes" when a learning activity was implemented and "No" when it was not implemented. In addition, observers assigned implementation scores using a four-point rating scale to evaluate the quality of implementation.

Student Activity Observation Sheet

The student activity observation sheet was used to monitor students' participation and engagement during learning activities. Student behaviors were observed and recorded by two independent observers at five-minute intervals throughout the instructional process. The collected data were used to determine the extent to which students actively participated in discussions, problem-solving activities, collaborative learning tasks, and other learning experiences facilitated by the model.

Student Response Questionnaire

The student response questionnaire was administered to gather students' perceptions of the developed learning model and its supporting instructional materials. The questionnaire was completed individually by students using a checklist format. Responses were subsequently analyzed according to predetermined evaluation criteria to determine the practicality and acceptability of the learning model.

Learning Independence Observation Sheet

The learning independence observation sheet was developed to assess students' self-directed learning competencies throughout the instructional process. The observed dimensions included self-confidence, self-control, responsibility, initiative, and

independent learning behaviors. Students' learning independence was evaluated by two observers, consisting of lecturers or trained colleagues, who remained in the classroom without directly participating in the teaching and learning activities. This procedure ensured that the observation process did not interfere with classroom instruction while maintaining objectivity in data collection.

Critical Thinking Skills Test

The critical thinking skills test was designed to measure students' critical thinking abilities before and after the implementation of the learning model. The instrument consisted of open-ended essay questions that required students to analyze problems, evaluate evidence, formulate arguments, and propose reasoned solutions. Prior to administration, the instrument underwent expert validation to ensure its content validity, construct validity, and appropriateness for measuring critical thinking skills. Only validated test items were used in the data collection process to ensure the accuracy and credibility of the research findings.

The validity of the developed products was evaluated using the criteria proposed by Nieveen et al. (2007), whereas practicality was determined through implementation observations and user responses. Effectiveness was assessed based on improvements in students' critical thinking skills and learning independence following the implementation of the developed learning model.

RESULTS AND DISCUSSION

RESULTS

Needs Analysis for Model Development

The needs analysis was conducted through classroom observations, interviews, and questionnaire administration involving lecturers and students. The findings revealed that the learning process was still predominantly characterized by lecture-based instruction and lecturer-centered approaches. Such conditions limited students' opportunities to actively construct knowledge and engage in meaningful learning experiences, thereby restricting the development of critical thinking skills and learning independence. Interviews with lecturers and students further indicated the need for an innovative learning model capable of integrating the local wisdom and educational values of pesantren with the competencies required in twenty-first-century learning. Participants emphasized that current instructional practices have not sufficiently facilitated active learning, critical inquiry, collaborative problem-solving, and independent learning behaviors.

The needs analysis also demonstrated that pesantren values, including independence, discipline, responsibility, *musyawarah* (deliberative discussion), and respect for knowledge, possess significant potential to be integrated into the learning process. These values were considered highly relevant for supporting the development of students' critical thinking skills and learning independence. The questionnaire results showed that 84% of students expressed the need for a more contextual learning model capable of connecting course content with real-life situations. Similarly, 79% of lecturers indicated the necessity for innovative instructional approaches that could enhance students' critical thinking skills and learning independence.

Development of the Pesantren-Based Ethnopedagogical Learning Model

Based on the results of the needs analysis, a Pesantren-Based Ethnopedagogical Learning Model was developed. The model consists of five instructional phases:

1. Orientation to Pesantren Values;
2. Exploration of Contextual Problems;
3. *Musyawah* and Critical Reflection;
4. Ethnopedagogical Knowledge Construction; and
5. Reflective Evaluation.

The developed products included a model handbook, implementation guidelines, learning modules, student worksheets, and assessment instruments designed to measure critical thinking skills and learning independence.

Expert Validation Results

The developed learning model was evaluated by educational experts, curriculum specialists, and pesantren education practitioners. The validation process aimed to assess the content validity and construct validity of the model as well as the quality of the supporting instructional materials and assessment instruments.

Table 1. Expert Validation Results of the Learning Model

Validation Aspect	Validation Aspect	Validation Aspect
Content Validity	3,86	Very Valid
Construct Validity	3,87	Very Valid

The results indicate that both the content and construct aspects of the developed learning model achieved scores within the “Very Valid” category, suggesting that the model is theoretically sound and pedagogically appropriate for implementation.

Validation Results of Supporting Instructional Materials

Table 2. Expert Validation Results of Supporting Instructional Materials

Validation Aspect	Mean Score	Category
Semester Learning Plan (SLP)	3,86	Very Valid
Learning Materials	3,83	Very Valid
Student Worksheets	3,91	Very Valid

The expert evaluation demonstrated that all supporting instructional materials met the criteria of very high validity. These findings indicate that the instructional materials were consistent with the learning objectives, instructional syntax, and assessment procedures embedded within the developed model.

Validation Results of the Critical Thinking Assessment Instrument

Table 3. Expert Validation Results of the Critical Thinking Assessment Instrument

Assessed Aspect	Mean Score	Category
Content Validity	3,70	Very Valid
Language and Writing Quality	3,97	Very Valid

The validation results show that the critical thinking assessment instrument achieved a very high level of validity in terms of both content relevance and language clarity. Therefore, the instrument was considered appropriate for measuring students' critical thinking skills within the implementation of the developed learning model.

Overall, the validation findings indicate that the Pesantren-Based Ethnopedagogical Learning Model, along with its supporting instructional materials and assessment instruments, falls within the "Very Valid" category. Consequently, the developed products were deemed suitable for implementation following minor revisions based on the recommendations provided by the validators.

Practicality Testing Results

The practicality of the developed learning model was evaluated through a limited-scale implementation involving lecturers and students. Practicality was assessed based on user responses regarding the ease of implementation, clarity of instructional syntax, suitability of learning materials, and overall usability of the model. The results of the practicality assessment are presented in Table 4.

Table 4. Practicality Test Results of the Developed Learning Model

Respondent	Percentage (%)	Category
Lecturers	93,4	Very Practical
Students	97,9	Very Practical
Average	95.7	Very Practical

The findings indicate that the developed Pesantren-Based Ethnopedagogical Learning Model achieved a very high level of practicality. Both lecturers and students reported that the instructional procedures were easy to understand and implement within the classroom setting. Furthermore, the learning syntax was perceived as clear and systematic, enabling lecturers to facilitate learning activities effectively. Students also reported that the model encouraged active participation, collaborative discussion, and meaningful engagement throughout the learning process.

These results suggest that the developed model can be implemented efficiently in higher education contexts and has the potential to support student-centered learning while integrating pesantren values into contemporary instructional practices.

Effectiveness Testing Results

The effectiveness of the developed learning model was evaluated by comparing students' critical thinking skills before and after the implementation of the model. In addition, students' learning independence was assessed through observation sheets and self-report questionnaires administered during the implementation phase.

Table 5. Results of Critical Thinking Skills Assessment

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Nilai pre test - Nilai post test	- 33.259	7.278	1.401	- 36.138	- 30.380	- 23.746	26	.000

The statistical analysis revealed a significant improvement in students' critical thinking skills following the implementation of the developed learning model. The comparison between pretest and posttest scores yielded a significance value of $p = .000$ ($p < .001$), indicating that the observed improvement was statistically significant. These findings suggest that the Pesantren-Based Ethnopedagogical Learning Model effectively enhanced students' ability to analyze problems, evaluate information critically, formulate logical arguments, and develop evidence-based solutions.

Learning Independence

Students' learning independence was evaluated following the implementation of the Pesantren-Based Ethnopedagogical Learning Model. The results are presented in Table 6.

Table 6. Students' Learning Independence

Measurement	Mean Score
Post-Implementation	3,92
Category	Very Good

The results indicate that students achieved a mean learning independence score of 3.92, which falls within the **Very Good** category. This finding suggests that the developed learning model was effective in fostering students' learning independence. Throughout the implementation process, students demonstrated greater responsibility for their learning tasks, increased self-confidence in expressing ideas, improved self-regulation, and stronger initiative in seeking information and solving problems independently.

The improvement in learning independence may be attributed to the integration of inquiry-based learning, problem-based learning, and pesantren values within the instructional process. Learning activities that emphasized contextual problem-solving, reflective thinking, collaborative *musyawarah*, and personal responsibility provided students with opportunities to develop self-directed learning behaviors. Moreover, the incorporation of pesantren values such as independence (*kemandirian*), discipline, and

responsibility reinforced students' capacity to manage their own learning processes effectively.

Overall, these findings demonstrate that the Pesantren-Based Ethnopedagogical Learning Model not only enhances students' critical thinking skills but also promotes learning independence, which is an essential competency for lifelong learning and academic success in higher education. Taken together, the findings indicate that the developed model effectively promotes both critical thinking skills and learning independence, thereby fulfilling the effectiveness criterion proposed by Nieveen et al. (2007).

DISCUSSION

The findings of this study indicate that the developed Pesantren-Based Ethnopedagogical Learning Model satisfies the criteria of validity, practicality, and effectiveness proposed by Nieveen et al. (2007). The high validity scores suggest that the model possesses a strong theoretical and pedagogical foundation, while the practicality results demonstrate that the model can be implemented effectively in higher education settings. Furthermore, the effectiveness testing confirms that the model contributes significantly to the improvement of students' critical thinking skills and learning independence.

The improvement in students' critical thinking skills can be attributed to the learning activities embedded within the model, which provide opportunities for learners to identify problems, analyze information, formulate arguments, and evaluate alternative solutions through collaborative discussion and *musyawarah*. These activities encourage students to engage actively in the learning process, develop analytical reasoning, and construct knowledge through interaction with peers and authentic learning contexts. Such findings are consistent with previous studies demonstrating that active and collaborative learning environments promote the development of higher-order thinking skills and problem-solving abilities (Duran & Dökme, 2023; Hart et al., 2021). Moreover, the findings align with constructivist learning theory, which emphasizes the role of learners as active participants in the construction of knowledge rather than passive recipients of information (Biggs, 1996; Vygotsky, 1978).

The integration of pesantren values within the instructional process also contributed to the enhancement of students' learning independence. The findings revealed that values such as discipline, responsibility, sincerity, and independence were effectively internalized through structured learning activities. As a result, students demonstrated greater responsibility for completing academic tasks, increased initiative in seeking information, and improved self-regulation during the learning process. These outcomes are consistent with andragogical principles, which emphasize learner autonomy and self-directed learning as essential characteristics of adult learners (Knowles et al., 2020). Consequently, students were not merely recipients of knowledge but became active agents responsible for managing and directing their own learning processes.

The results further support the theoretical foundations of ethnopedagogy, which views local culture and indigenous knowledge as valuable educational resources capable of enriching learning experiences and strengthening student engagement (Alwasilah et al., 2009; Kartadinata, 2018). By incorporating pesantren traditions and values into contemporary instructional practices, the developed model created a culturally

responsive learning environment that connected academic content with students' social and cultural backgrounds. Such contextualization enhanced the relevance of learning activities and facilitated deeper engagement in critical inquiry and reflective learning.

In addition, the findings corroborate previous research indicating that culturally responsive and local wisdom-based learning approaches can enhance higher-order thinking skills, student engagement, character development, and learning independence. The integration of cultural values into instructional design enables students to connect theoretical knowledge with real-life experiences, thereby fostering meaningful learning and promoting the development of essential twenty-first-century competencies. These competencies include critical thinking, problem-solving, collaboration, communication, and lifelong learning skills, all of which are increasingly important in contemporary educational and professional contexts (Care et al., 2014; OECD, 2019).

Therefore, the development of the Pesantren-Based Ethnopedagogical Learning Model represents a promising educational innovation that bridges local cultural wisdom with contemporary pedagogical approaches. The model not only strengthens students' critical thinking skills and learning independence but also contributes to character formation through the internalization of pesantren values. As such, it offers a relevant and sustainable instructional alternative for higher education institutions, particularly those seeking to integrate local cultural heritage into modern educational practices while addressing the challenges of twenty-first-century learning.

CONCLUSION

This study successfully developed a Pesantren-Based Ethnopedagogical Learning Model that adopts the *Bahtsul Masail* tradition as its core instructional strategy. The developed model met the criteria of validity, practicality, and effectiveness, demonstrating its potential to enhance university students' critical thinking skills and learning independence. The integration of pesantren values and intellectual traditions into the learning process through problem identification, literature exploration, collaborative *musyawarah*, evidence-based argumentation, and collective solution formulation created an active, contextual, and meaningful learning environment.

The implementation of the *Bahtsul Masail*-based learning model provided students with opportunities to develop critical thinking skills through processes of analysis, evaluation, synthesis of information, and logical argument construction in response to authentic problems. Furthermore, students' engagement in independent information seeking, literature review, and problem-solving activities contributed significantly to the development of learning independence. These findings suggest that *Bahtsul Masail* is not only a valuable intellectual heritage of pesantren education but also a promising pedagogical approach that can be adapted to support the development of twenty-first-century competencies in higher education.

Theoretically, this study contributes to the growing body of literature on ethnopedagogy by demonstrating how local cultural wisdom and indigenous educational traditions can be integrated with contemporary student-centered learning approaches. Practically, the developed model offers an innovative instructional alternative for higher education institutions seeking to strengthen critical thinking skills, learning independence, and character development while preserving cultural identity and local wisdom.

Despite these contributions, this study was conducted within a specific institutional context, which may limit the generalizability of the findings. Future research is therefore recommended to examine the effectiveness of the model across different academic disciplines, educational levels, and institutional settings. Further studies may also investigate the long-term impact of the model on students' academic achievement, character development, problem-solving abilities, and other higher-order thinking skills to provide a more comprehensive understanding of its educational value.

BIBLIOGRAPHY

- Al-Fadhli, S. (2023). Constructivist learning approaches in higher education: Promoting student engagement and knowledge construction. *Journal of Educational Innovation*, 18(2), 145–160.
- Al Hasyimi, M. (2023). Collaborative learning and critical thinking development in Islamic higher education. *Journal of Islamic Education Studies*, 11(1), 45–59.
- Ally, M., & Wark, N. (2023). Self-directed learning among adult learners in digital environments. *International Journal of Lifelong Education*, 42(3), 245–260. <https://doi.org/10.1080/02601370.2023.2184567>
- Alwasilah, A. C., Suryadi, K., & Karyono, T. (2009). *Etnopedagogi: Landasan praktik pendidikan dan pendidikan guru*. Kiblat Buku Utama.
- Arnyana, I. B. P. (2019). Pembelajaran untuk meningkatkan kompetensi 4C (Communication, Collaboration, Critical Thinking, and Creativity) pada era Revolusi Industri 4.0. *Prosiding Seminar Nasional Pendidikan*, 1(1), 1–12.
- Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education*, 32(3), 347–364. <https://doi.org/10.1007/BF00138871>
- Børte, K., Lillejord, S., & Johansson, L. (2023). Student engagement and active learning in higher education: A systematic review. *Teaching in Higher Education*, 28(4), 623–640. <https://doi.org/10.1080/13562517.2022.2041345>
- Butler, H. A., Pentoney, C., & Bong, M. P. (2017). Predicting real-world outcomes: Critical thinking ability is a better predictor of life decisions than intelligence. *Thinking Skills and Creativity*, 25, 38–46. <https://doi.org/10.1016/j.tsc.2017.06.005>
- Care, E., Griffin, P., & McGaw, B. (2014). *Assessment and teaching of 21st century skills*. Springer. <https://doi.org/10.1007/978-94-017-9395-7>
- Conaway, R. N. (2009). Andragogy and successful continuing education. In V. Wang (Ed.), *Handbook of research on e-learning applications for career and technical education* (pp. 65–78). IGI Global.
- Duran, M., & Dökme, I. (2023). The effect of inquiry-based learning on students' critical thinking skills: A meta-analysis. *International Journal of Educational Research*, 119, 102177. <https://doi.org/10.1016/j.ijer.2023.102177>
- Dwyer, C. P., Hogan, M. J., & Stewart, I. (2014). An integrated critical thinking framework for the 21st century. *Thinking Skills and Creativity*, 12, 43–52. <https://doi.org/10.1016/j.tsc.2013.12.004>
- Facione, P. A. (2020). *Critical thinking: What it is and why it counts* (2020 update). Insight Assessment.
- González, E., & Wiggins, R. (2023). Knowledge application and learning transfer in higher education. *Studies in Higher Education*, 48(6), 921–935.
- Hart, C., Chalmers, D., & Hey, V. (2021). Critical thinking and graduate employability in higher education. *Teaching in Higher Education*, 26(8), 1095–1111. <https://doi.org/10.1080/13562517.2020.1725884>
- Kartadinata, S. (2018). *Etnopedagogi sebagai pendekatan pendidikan berbasis kearifan lokal*. Bandung: UPI Press.

- Kim, S., & Choi, H. (2023). Critical thinking and problem-solving skills among university students in the digital age. *Education and Information Technologies*, 28(5), 5789–5808. <https://doi.org/10.1007/s10639-022-11356-4>
- Knowles, M. S., Holton, E. F., & Swanson, R. A. (2020). *The adult learner: The definitive classic in adult education and human resource development* (9th ed.). Routledge.
- Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. Jossey-Bass.
- Meijer, P., Kuijpers, M., Boei, F., Vrieling, E., & Geijssel, F. (2023). Knowledge construction and collaborative learning in higher education. *Learning and Instruction*, 84, 101708. <https://doi.org/10.1016/j.learninstruc.2022.101708>
- Mok, H. M., & Chiu, T. K. F. (2023). Digital learning and knowledge utilization in higher education. *Computers & Education*, 191, 104632. <https://doi.org/10.1016/j.compedu.2022.104632>
- Nieveen, N., McKenney, S., & van den Akker, J. (2007). Educational design research. In T. Plomp & N. Nieveen (Eds.), *An introduction to educational design research* (pp. 35–53). Netherlands Institute for Curriculum Development (SLO).
- Nugroho, A. M., & Susilowati, L. (2023). Challenges of guided inquiry learning implementation in higher education. *Journal of Educational Research and Practice*, 13(2), 88–101.
- OECD. (2019). *Future of education and skills 2030*. OECD Publishing.
- Pare, A., Rukmana, D., & Hidayat, T. (2023). Education and human resource development in the era of globalization. *International Journal of Educational Development*, 97, 102712.
- Rambung, E., Tuerah, J., & Wenas, R. (2023). Education quality and human capital development: A systematic review. *Journal of Education and Learning*, 17(2), 215–228.
- Tawfik, A. A., & Hung, W. (2023). Problem-based learning and inquiry-based learning: Contemporary perspectives and future directions. *Interdisciplinary Journal of Problem-Based Learning*, 17(1), 1–12. <https://doi.org/10.14434/ijpbl.v17i1.33764>
- Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974). *Instructional development for training teachers of exceptional children*. Indiana University.
- Lev Vygotsky. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- White, R., & Smith, J. (2022). Critical thinking and decision-making in higher education. *Journal of Higher Education Research*, 15(3), 210–225.
- Yunus, M. (2023). Traditional learning methods in pesantren education: Opportunities and challenges in contemporary contexts. *Journal of Islamic Educational Studies*, 8(2), 125–138.
- Zheng, Q., & Zhang, L. (2023). Critical thinking development through active learning strategies in higher education. *Higher Education Research & Development*, 42(5), 1124–1139. <https://doi.org/10.1080/07294360.2022.2143517>