



**CROSS CULTURAL PERSPECTIVES ON AI ENHANCED TEACHER EDUCATION:
INSIGHTS FROM A STUDENT MOBILITY PROGRAMME AT IPG BATU LINTANG,
MALAYSIA**

Nawawi, Mustika Sari*, Nuzulia Arda, Betris Deviola, Eka Trisianawati, Herditiya

Biology Education Study Program, Faculty of Mathematics and Natural Sciences and Technology,
Universitas PGRI Pontianak, Pontianak, Indonesia

*email: mvztika.sari@gmail.com

Received: 2026-03-01 Accepted: 2026-06-18 Published: 2026-06-30

Abstract

This study explored artificial intelligence (AI)-based teacher education practices observed during an academic mobility program at the Institute of Teacher Education (IPG) Batu Lintang, Sarawak, Malaysia, and interpreted their implications for the development of teacher education in Indonesia. A qualitative approach with an exploratory case study design was employed. Data were collected through non-participant observation, analysis of activity documents, and examination of learning artifacts, and were then analyzed using six-phase thematic analysis. The results showed that AI was positioned as a core component of learning design through the integration of six platforms, namely Gemini AI, Canva AI, Suno AI, NotebookLM, Bitable AI, and CapCut AI, which were used to produce multimodal media in the form of infographics, posters, songs, audio, simulations, and learning videos linked to the Content Standards (Standard Content) of the DSKP. This product-based practice strengthens the digital literacy and creativity of prospective teachers, while the mobility program served as a means of transferring good practices across cultures. The findings suggest that AI integration in teacher education in Indonesia should be positioned as part of pedagogical transformation rather than merely a technical skill.

Keywords: artificial intelligence, learning media, academic mobility, teacher education, cross-cultural learning

How to cite (in APA style): Nawawi, N., Sari, M., Arda, N., Deviola, B., Trisianawati, E., & Herditiya, H. (2026). Cross-cultural perspectives on AI-enhanced teacher education: Insights from a student mobility programme at IPG Batu Lintang, Malaysia. *Jurnal Pendidikan Informatika Dan Sains*, 15(1), 189–194. <https://doi.org/10.31571/saintek.v15i1.11230>

Copyright (c) 2026 Nawawi Nawawi, Mustika Sari, Nuzulia Arda, Betris Deviola, Eka Trisianawati, Herditiya
Herditiya

DOI: 10.31571/saintek.v15i1.11230

INTRODUCTION

Development intelligence artificial intelligence (AI) brings significant change in the world of education, especially in the development of learning media, design instructional, and improvement involvement participant education. Review to device learning AI- based in education tall show that technology This capable present experience personalized learning, feedback more back fast, and presentation more material flexible (Luo et al., 2025). In the context of teacher education, AI does not only view as device technology, but also as means for strengthen competence pedagogy and creativity prospective teachers in designing experience innovative learning (Shukla, 2025).



AI mastery now become part from digital competence of teachers in the 21st century, so that prospective teachers need equipped ability use at a time teach technology the in a way meaningful (Ng et al., 2023). Experience direct in create product learning using generative AI proven help prospective teachers build AI literacy and confidence in take advantage of it in a way responsible answer (MacDowell et al., 2024). On the other hand, some prospective teachers still put concern to reliability and implications ethical technology this, so that proper assistance still necessary (Gamlem et al., 2025).

Along with the digital transformation, the mobility program academic international become one of the strategies for expand outlook student to practice education in various countries. Mobility programs term short proven develop competence cross culture participants, okay from side knowledge, skills, and attitude (Przytuła et al., 2024). Through the student mobility program, participants get chance observe in a way direct implementation policy, culture academic, as well as innovation learning in institutions partners, so that allows the transfer of knowledge and practice occurs good that can adapt to the context education origin.

One of institutions that demonstrate practice innovative in teacher education is IPG Batu Lintang, Sarawak, Malaysia. Based on results observation during the mobility program academic, learning in institutions the has utilise various AI platforms, such as Gemini AI, Canva AI, Suno AI, CapCut AI, and Bitable AI, in development of digital learning media. Technology the used for produce infographics, posters, learning videos, educational audio, simulations learning, until song based supporting curriculum learning creative and multimodal.

Although study about AI in education Keep going developing, partly big studies Still focus on perception users to AI technology or effectiveness its use in learning (Gamlem et al., 2025; Wu & Zhang, 2025). In the Indonesian context, the study show that AI integration is still is at the stage early and highly dependent on reinforcement teacher capacity (Damanik et al., 2025; Mukhlis et al., 2025; Zalisman, 2025). Studies that link experience mobility academic international with observation practice AI- based teacher education is still relatively limited, especially in the context of Southeast Asian countries. Therefore that, research This try explore How student mobility program participants understand the meaning practice AI -based teacher education observed at IPG Batu Lintang as well as the implications for development teacher education in Indonesia.

Based on this background, this study addresses three questions: First, how was AI integrated into teacher education during the student mobility program at IPG Batu Lintang, Malaysia? Second, how did participants interpret the AI-based learning innovations implemented at IPG Batu Lintang? Third, what are the implications of these experiences for the development of teacher education in Indonesia?

In line with formulation problem, research This aim for describe practice AI integration in teacher education at IPG Batu Lintang, Malaysia; analyze experience and reflection student mobility participants towards innovation learning AI- based; and identify opportunity adaptation practice AI-based teacher education for development teacher education in Indonesia.

METHOD

Types and Design of Research

Study This use approach qualitative with design studies case exploratory (exploratory qualitative case study). This design chosen Because study focus on understanding deep to practice ongoing AI- based teacher education in One context specific, namely the mobility program academics at IPG Batu Lintang, so researchers can examine phenomenon in a way holistic in background naturally.

Location and Context Study

Study carried out at the Batu Lintang Institute of Teacher Education (IPG), Sarawak, Malaysia, during implementation of the student mobility program. Context study covers three series observed

activities, namely class art creative, campus museum visits, and classes technology that becomes focus main because in its participant producing learning media use various AI platforms.

Data source

Data sources in study This consists of on three types. First, the results observation direct to activity learning during the program. Second, documentation activities that include notes field and recording activities. Third, artifacts learning in the form of digital products produced participants, such as infographics, posters, songs, audio, simulations, and learning videos. Use three type source This allows researchers get the whole picture on researched practices.

Data collection technique

Data collected through technique observation non-participants and analysis document. In the observation non-participants, researchers observe the way learning without involved direct in activity, then take notes use of AI platforms, flow activities and products produced from reports submitted students who participate in student mobility.

Data Analysis Techniques

Data analysis using analysis thematic analysis follows six phases developed by Braun and Clarke (2006) and elaborated through example work by Byrne (2022), namely: (1) familiarization to data; (2) compilation code beginning; (3) search theme; (4) review theme; (5) definition and naming theme; and (6) compilation report. Analysis process ongoing in a way iterative and reflective, so that researchers move back and forth between raw data, codes, and the themes formed until obtained structure coherent thematic.

Data Validity

For guard data validity, research this apply triangulation source with compare results observation, documentation activities and artifacts learning. Credibility strengthened through involvement researchers who have been around for quite a long time during the program and recording audit trail on each stage analysis. Transferability guarded through description adequate context, while dependability and confirmability maintained with documenting decision analytical in a way transparent so that the withdrawal process theme can traced return.

RESULTS AND DISCUSSION

AI Platform Integration in Learning Media Production

Observation results show that AI has become an integral part of the learning process at IPG Batu Lintang. Various platforms are used in a way integrated for support development of learning media, and each platform produces type different products. Mapping summary between platforms, functions and products produced presented in Table 1.

Table 1. Observed AI platforms, functions, and learning media products

AI Platform	Function main	Learning media products
Gemini AI (Create Image and Canvas)	Produce image and audio from order text	Learning posters and learning audio
Canva AI	Graphic design AI- assisted	Infographics learning
Suno AI	Produce song from text	Educational songs based on Content Standards (SK)
NotebookLM	Summarizing and organizing simulation narrative from source	Simulation learning accompanied by narrative voice

AI Platform	Function main	Learning media products
Bitable AI	Production of learning videos web- based	Learning videos based on the decree from DSKP
CapCut AI	Automatic video editing	Learning videos

Source: results observation and analysis document activities (2026).

Table 1 shows that the six platforms used in a way integrated in One series activity learning, with mutually exclusive functions complete start from manufacturing image and audio, design graphics, creation song, arrangement simulation narrative, until video production and editing. The resulting product multimodal in nature, encompassing visual, audio and video output, all in all designed to be connected directly with the Content Standards in DSKP.

Analysis Results Theme Thematic

The use of AI allows the media production process to be carried out in a way faster and more flexible. Participants pushed for produce connected digital products direct with curriculum, so that every external own context clear pedagogical results. Analysis results thematic based on observation and documentation data summarized in Table 2.

Table 2. Themes, subthemes, and indicators results analysis thematic

Theme	Subtheme	Indicator from observation and documentation
AI as core design components learning	Cross- platform integration	Six AI platforms are used in One series session learning
Multimodal media production	Visual, audio, and video output	Infographics, posters, songs, audio, simulations, and learning videos
Learning based product	External real connected with curriculum	Every product associated with the Content Standards in DSKP
Strengthening competence prospective teacher	Digital literacy and creativity	Participant designing media in an independent with a fast and flexible process
Mobility academic as knowledge transfer	Learning cross culture	Reflection participant on different practices from context education origin

Source: results analysis thematic research data (2026).

Discussion

AI as Core Components in Learning Design

The findings in Table 1 show that AI is not Again positioned as technology additional, but as component main in design learning. This pattern in line with findings that device AI- based can play a role direct in presentation and management material learning in education high (Luo et al., 2025). Use six platforms in One series the session also shows that participant trained for choose appropriate tools with the media's intended purpose produced, a readiness in line with findings that reception prospective teachers' interest in AI is increasing when supported adequate training and a clear AI-TPACK framework (Runge et al., 2025).

Products produced multimodal in nature, encompassing visual, audio, and video output. Practice production kind of This in harmony with results studies that show that utilization of generative AI contributes to improvement ability innovation and digital literacy of participants education (Wu & Zhang, 2025). In the context of teacher education, skills designing diverse media is part from 21st century digital competencies that are needed owned prospective teachers (Ng et al., 2023), at the same time reflect perspective double prospective teachers who view generative AI as

opportunity productivity at a time challenge pedagogical needs managed in a way reflective in practice teaching (Bae et al., 2024).

Meaning Innovation Learning AI-Based and Reinforcement Prospective Teacher Competencies

The use of AI allows the media production process to be carried out in a way faster and more flexible. Participants pushed for produce connected digital products direct with curriculum, so that every external own context clear pedagogical experience. create with generative AI like This known strengthen AI literacy and confidence prospective teachers in take advantage of it in a way creative and responsible answer (MacDowell et al., 2024).

Practice learning at IPG Batu Lintang which places AI as core components, driving multimodal media production, and emphasizes learning based connected products with Content Standards show that AI works as expanding tool capacity creative prospective teachers, not just replace task technical. This pattern in line with proof experimental that AI integration in learning-based design can increase pattern think think design (design thinking mindset) and ability think creative and reflective participant educated (Saritepeci & Yildiz Durak, 2024). Although thus, experience participant need interpreted in a way critical, remembering part prospective teachers in general Still put concern to reliability and dimensions ethical AI in learning (Gamlem et al., 2025).

Academic Mobility as Cross- Cultural Knowledge Transfer

Mobility program academic give chance for participant for observe in a way direct practice different education from context of the country of origin. Through interaction with environment IPG Batu Lintang academic, participant get understanding about method AI technology is integrated in teacher education. Experience This show that student mobility is not only functioning as activity exchange academic, but also as knowledge transfer and innovation mechanisms education across countries, as shown by studies about development competence cross culture through mobility programs term short (Przytuła et al., 2024). Findings this is also in line with results study towards mobility programs term short for student prospective teachers in Taiwan, which shows that experience teach cross- country strengthening competence exploratory, practical, and caring participant to context different education from their country of origin (Lin et al., 2025).

Implications for Development of Teacher Education in Indonesia

Based on reflection on observed practices, there are a few potential aspects adapted in teacher education in Indonesia. First, the integration of AI in development of learning media can strengthen digital competency of prospective teachers, in line with framework teacher competency in the 21st century (Ng et al., 2023). Second, approach learning based projects that generate product real can increase creativity and skills 21st century. Third, the utilization of various AI platforms in an integrated can expand experience multimodal learning.

Adaptation the need considers conditions in Indonesia, which show that AI integration is still is at the stage early and demanding strengthening teacher capacity in general sustainable (Damanik et al., 2025; Mukhlis et al., 2025; Zalisman, 2025). With thus, development teacher education in Indonesia should be put integration AI technology is not solely as skills technical, but as part from transformation supportive pedagogy learning innovative, creative, and participant - centered educate.

CONCLUSION

Study This show that the student mobility program at IPG Batu Lintang provides experience cross valuable culture in understand practice AI -based teacher education. The integration of six AI platforms, namely Gemini AI, Canva AI, Suno AI, NotebookLM, Bitable AI, and CapCut AI, supports connected multimodal media production with curriculum at a time strengthen creativity,

digital literacy, and innovation pedagogy prospective teacher. Experience mobility academic play a role as practice transfer facilities good that can become reference for development teacher education in Indonesia. With thus, mobility academic and AI utilization are two interrelated elements complete in push transformation teacher education in the digital era. Study advanced recommended for expand data sources, for example through interview deep with participants and teachers, so that the meaning to practice AI- based becomes more comprehensive. In addition, it is also recommended to develop a training model AI integration for prospective teachers in Indonesia who emphasize dimensions pedagogical, creativity, and ethics utilization technology.

REFERENCES

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & Quantity*, 56 (3), 1391–1412. <https://doi.org/10.1007/s11135-021-01182-y>
- Damanik, PCIC, Jayanti, FD, Uli, AA, Husaeni, RA, & Chaled, MI (2025). Digital citizenship education in the era 5.0: Integrating artificial intelligence in Indonesian educational context. *JIMU: Journal Multidisciplinary Science*, 3 (4), 1895–1906. <https://doi.org/10.70294/jimu.v3i04.1579>
- Gamlem, S. M., McGrane, J., Brandmo, C., Moltudal, S., Sun, S. Z., & Hopfenbeck, T. N. (2025). Exploring pre-service teachers' attitudes and experiences with generative AI: A mixed methods study in Norwegian teacher education. *Educational Psychology*. Advance online publication. <https://doi.org/10.1080/01443410.2025.2528663>
- Luo, J., Zheng, C., Yin, J., & Teo, H.H. (2025). Design and assessment of AI-based learning tools in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 22 (1), Article 42. <https://doi.org/10.1186/s41239-025-00540-2>
- MacDowell, P., Moskalyk, K., Korchinski, K., & Morrison, D. (2024). Preparing educators to teach and create with generative artificial intelligence. *Canadian Journal of Learning and Technology*, 50 (4), 1–23. <https://doi.org/10.21432/cjlt28606>
- Mukhlis, S., Setiawan, B., Ruwaida, GA, Zulela, MS, Febriyani, EN, & Listiani, ME (2025). Training introduction of Artificial Intelligence (AI) to the project strengthening profile Pancasila students for increase Teacher Competence in Digital Transformation in DKI Jakarta. *Initiative: Journal Dedication Community Service*, 4 (1), 34–51. <https://doi.org/10.61227/inisiatif.v4i1.444>
- Ng, DTK, Leung, JKL, Su, J., Ng, RCW, & Chu, SKW (2023). Teachers' AI digital competencies and twenty-first century skills in the post-pandemic world. *Educational Technology Research and Development*, 71 (1), 137–161. <https://doi.org/10.1007/s11423-023-10203-6>
- Panday-Shukla, P. (2025). Exploring generative artificial intelligence in teacher education. *Teaching and Teacher Education*, Article 105088. <https://doi.org/10.1016/j.tate.2025.105088>
- Przytuła, S., Barzykowski, K., Cassar, V., & Szymańska- Czaplak , E. (2024). Developing cross-cultural competence of students through short-term international mobility program. *International Journal of Training and Development*, 28 (2), 169–188. <https://doi.org/10.1111/ijtd.12315>
- Wu, D., & Zhang, J. (2025). Generative artificial intelligence in secondary education: Applications and effects on students' innovation skills and digital literacy. *PLOS ONE*, 20 (5), Article e0323349. <https://doi.org/10.1371/journal.pone.0323349>
- Zalisman. (2025). The artificial intelligence knowledge on digital literacy of teaching competence among Islamic education teachers. *POTENTIA: Journal Islamic Education*, 11 (1), 1–18. <https://doi.org/10.24014/potensia.v11i1.36936>