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Empowering Islamic Religious Education Teachers through Generative AI for Differentiated Learning: An Asset-Based Community Development Approach

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ABSTRACT

This community empowerment program aimed to strengthen PAI teachers' capacity to implement differentiated learning through Generative Artificial Intelligence (GenAI) using an Asset-Based Community Development (ABCD) approach. The program involved 36 PAI teachers from 12 senior high schools in Surabaya and was implemented over six months using a modified 5-D empowerment cycle: discovery, dream, design, delivery, and sustainability. Data were collected through pre-tests, post-tests, teaching-module assessments, satisfaction questionnaires, interviews, and focus group discussions. Quantitative data were analyzed using Normalized Gain (N-Gain), while qualitative data were examined thematically. The findings demonstrated substantial improvement in teacher competence, with the mean score increasing from 42.15 to 84.50 and an overall N-Gain of 0.73, categorized as high. Teachers also produced differentiated AI-assisted teaching modules with an average quality score of 87.6%. Partner satisfaction reached 92.4%, indicating very high acceptance. Qualitative findings revealed increased teacher confidence, stronger digital religious-content verification, and enhanced peer collaboration. The program demonstrates that ABCD can support sustainable, ethical, and teacher-centered GenAI integration in Islamic Religious Education.

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INTRODUCTION

Indonesia's adoption of the Merdeka Curriculum represents a significant shift from predominantly standardized and teacher-centered instruction toward a more flexible, learner-centered, and adaptive educational paradigm. One of its important pedagogical orientations is differentiated

learning, which requires teachers to respond to students' differences in readiness, interests, learning profiles, and learning needs. Within this framework, differentiation is not merely a variation in teaching methods but a systematic effort to align learning content, instructional processes, learning products, and classroom environments with learner diversity. Recent studies indicate that differentiated instruction can contribute to student engagement, motivation, learning quality, and academic achievement when it is supported by adequate teacher competence and instructional planning (Ilmi, 2023; Sari et al., 2023; Asriadi et al., 2023). In the Indonesian context, however, the implementation of differentiated learning remains uneven, particularly because teachers continue to encounter challenges related to assessment, instructional design, workload, technological competence, and access to appropriate learning resources (Pratomo et al., 2024; Septiani et al., 2024).

These challenges become particularly significant in Islamic Religious Education (Pendidikan Agama Islam/PAI), where classrooms frequently contain substantial variations in students' prior religious knowledge, Qur'anic literacy, educational backgrounds, learning experiences, and levels of religious understanding. Differentiated PAI therefore requires teachers to move beyond uniform instructional delivery and develop learning experiences that remain pedagogically responsive while preserving the epistemological and ethical foundations of Islamic education. Such responsiveness is important because differentiation in PAI should not reduce religious learning to technical personalization alone; rather, it should integrate cognitive development, contextual understanding, character formation, and adab. Consequently, teachers require instructional strategies that can accommodate learner diversity without compromising the authenticity and integrity of Islamic content.

Preliminary situational analysis conducted with partner schools in Surabaya identified a practical gap between the policy expectations of differentiated learning and teachers' capacity to translate these expectations into systematic instructional planning. PAI teachers reported difficulties in developing differentiated Modul Ajar, particularly when a single learning topic required several levels of instructional materials, learning activities, assessment tasks, and expected learning products. This condition is consistent with broader evidence showing that teachers may recognize the importance of differentiated instruction but experience difficulties in its operationalization because of limited preparation time, insufficient professional development, uneven technological proficiency, and restricted access to instructional resources (Ilmi, 2023; Pratomo et al., 2024; Sari et al., 2023). When these constraints are not adequately addressed, differentiation risks becoming a conceptual requirement rather than a consistently implemented classroom practice. Teachers may consequently rely on conventional and relatively uniform instructional approaches, limiting opportunities to accommodate learner diversity and develop higher-order thinking.

The rapid emergence of Generative Artificial Intelligence (GenAI) provides a potential technological pathway for addressing this instructional-design burden. Large Language Models (LLMs), including ChatGPT, Claude, and Gemini, can support educators in generating and revising instructional materials, developing questions, constructing learning scenarios, designing assessment instruments, and adapting educational content to different learner profiles. A systematic mapping review of 407 publications identified pedagogical enhancement, specialized training, writing assistance, professional development, and interdisciplinary learning as important areas of GenAI application in education (Yusuf et al., 2024). Similarly, research on prompt engineering demonstrates that the quality of prompts substantially influences the relevance and usefulness of AI-generated educational outputs, suggesting that teachers' ability to formulate, refine, and evaluate prompts is an important component of effective GenAI integration (Park & Choo, 2025; Walter, 2024). GenAI therefore has the potential to reduce the time and cognitive burden associated with preparing differentiated instructional resources, provided that teachers remain responsible for pedagogical decisions and content validation.

Nevertheless, the integration of GenAI into education should not be understood as a technologically neutral process. Generative systems may produce inaccurate, biased, culturally inappropriate, or fabricated information, while their use also raises concerns regarding academic integrity, privacy, authorship, overdependence, and the weakening of critical engagement (Yusuf et al., 2024). These concerns become more sensitive in PAI because AI-generated religious information requires careful verification against authoritative Islamic sources. Recent studies in Islamic education have highlighted the opportunities of AI for personalized learning and instructional-material development while simultaneously emphasizing the need for ethical safeguards, teacher competence, academic integrity, and contextual validation of religious content (Hasanah et al., 2024; Rahman & Afandi, 2024). From an Islamic educational perspective, responsible AI use should therefore be anchored in principles such as amanah, honesty (ṣidq), justice (‘adl), responsibility, and maṣlaḥah, rather than being driven solely by technological efficiency. Recent scholarship specifically argues that the ethical integration of GenAI into Islamic education requires the simultaneous development of technological infrastructure, human capability, and ethical governance (Mukaffan & Siswanto, 2025).

The central problem, therefore, is not simply whether PAI teachers have access to GenAI, but whether they possess the pedagogical, technological, and ethical capacity to use it critically for differentiated instruction. This distinction is important because providing teachers with AI tools without strengthening their professional judgment may reproduce or even amplify existing instructional problems. AI-generated materials must be reviewed for curricular alignment, pedagogical appropriateness, factual accuracy, cultural sensitivity, and the validity of religious references. Recent research on AI use in Islamic Religious Education similarly reports that teachers face concerns related to digital literacy, ethical compatibility, misinformation, and the adequacy of technological infrastructure (Hasanah et al., 2024; Ibrohim et al., 2026). Accordingly, teacher empowerment should emphasize AI as a pedagogical assistant rather than a substitute for teachers’ professional and moral authority.

To address this multidimensional challenge, this community empowerment program employed the Asset-Based Community Development (ABCD) approach. ABCD is particularly relevant because it shifts the orientation of empowerment from identifying community deficiencies toward recognizing, mobilizing, and strengthening existing assets. In educational settings, such assets may include teachers’ professional experience, peer networks, institutional facilities, collaborative forums such as the Musyawarah Guru Mata Pelajaran (MGMP), and locally grounded Islamic pedagogical knowledge. Previous community empowerment research has demonstrated the relevance of ABCD for strengthening teachers’ professional competencies by utilizing existing community and institutional resources rather than relying exclusively on externally imposed interventions (Alhamuddin et al., 2020; Husna, 2024). Within the present program, these assets were positioned as the foundation for collaborative learning, peer mentoring, prompt-engineering practice, instructional-module development, and ethical reflection on AI use.

The novelty of this program lies in the integration of three dimensions that are often addressed separately: differentiated pedagogy, Generative AI literacy, and asset-based teacher empowerment within Islamic education. Existing studies have predominantly examined differentiated learning as a curriculum implementation issue or investigated GenAI in terms of its general educational opportunities and risks. Meanwhile, emerging research on AI in Islamic education has increasingly emphasized ethical considerations but has paid comparatively limited attention to community-based teacher empowerment models that translate AI literacy into concrete differentiated instructional products. This gap indicates the need for an intervention that does not merely introduce teachers to GenAI tools but develops their capacity to employ these tools collaboratively, critically, and ethically within the specific pedagogical demands of PAI.

Accordingly, this community empowerment program involved 36 PAI teachers from 12 partner schools in Surabaya and aimed to strengthen their capacity to design, implement, and evaluate GenAI-assisted differentiated teaching modules. The program specifically sought to (1) strengthen teachers' conceptual and practical understanding of differentiated instruction and responsible GenAI use; (2) develop teachers' capacity to formulate effective prompts for generating differentiated PAI learning materials; (3) facilitate the production and refinement of AI-assisted Modul Ajar through collaborative peer learning; and (4) evaluate changes in teachers' knowledge and pedagogical competence through Normalized Gain (N-Gain) analysis and partner satisfaction assessment. By positioning teachers and their professional networks as central assets, the program seeks to demonstrate how ABCD can provide a sustainable community-based pathway for advancing ethical and context-sensitive AI innovation in Islamic Religious Education.

METHODS

Empowerment Model: ABCD Framework

This community empowerment program was implemented over six months, from January to June 2026, involving 12 partner senior high schools (SMA/SMK) in Surabaya, East Java. The program employed an Asset-Based Community Development (ABCD) approach because the intervention was designed not merely to transfer technological knowledge but to identify, mobilize, and strengthen the existing professional, institutional, technological, and social assets of PAI teachers and partner schools. The ABCD approach emphasizes community participation, asset recognition, collective ownership, and locally driven sustainability rather than deficit-oriented intervention (Mathie & Cunningham, 2003; Green & Haines, 2016). The implementation was operationalized through a modified 5-D Appreciative Inquiry cycle, consisting of Define–Discover, Dream, Design, Deliver/Destiny, and Sustain. The stages were adapted to the specific needs of Generative AI integration and differentiated PAI instruction.

Define and Discover Asset Mapping.

The first stage focused on identifying the existing assets of partner schools and participating teachers. Asset mapping covered teachers' prior pedagogical competencies, experience in developing Modul Ajar, digital literacy, availability of computers and mobile devices, school internet connectivity, Learning Management System (LMS) facilities, digital learning resources, and the functioning of the MGMP PAI network. Rather than beginning with teachers' limitations, the facilitation team used appreciative inquiry to identify existing capacities that could become the foundation for subsequent innovation.

Dream Collective Visioning.

The second stage facilitated collaborative reflection and visioning activities. Teachers were invited to formulate a shared vision of an adaptive PAI learning environment in which students with different levels of readiness, interests, and learning profiles could access appropriately differentiated learning experiences. The vision also incorporated responsible use of Generative AI as a teacher-support technology while maintaining teachers' professional judgment and Islamic ethical principles.

Design Co-Designing Solutions.

In the third stage, facilitators and teachers collaboratively designed practical solutions based on the assets identified during the previous stages. The main activities consisted of workshops on differentiated instruction, Generative AI literacy, prompt engineering, instructional-material development, and validation of AI-generated religious content. Teachers practiced constructing structured prompts using the CREATE framework—Context, Request, Explanation, Action, Tone, and

Extras to produce differentiated learning materials. Particular attention was given to the verification of Qur'anic verses, hadith, and other religious references through digital takhrij procedures. This stage emphasized a human-in-the-loop approach in which AI-generated outputs were treated as drafts requiring teacher review, contextualization, and pedagogical validation rather than as authoritative sources.

Deliver/Destiny Classroom Implementation and Mentoring.

The fourth stage involved the implementation of AI-assisted differentiated Modul Ajar in selected classroom settings. Teachers piloted the modules with their students and received mentoring from the facilitation team and peer teachers. Peer observation was conducted to examine the alignment between the planned differentiated activities and actual classroom implementation. Reflective discussions and clinical supervision were subsequently used to identify implementation challenges and refine the instructional modules.

Sustain Institutionalization and Knowledge Sharing.

The final stage focused on ensuring that the intervention continued beyond the formal training period. Teachers collaboratively developed a digital repository, referred to as the Bank Modul Ajar Digital, containing validated AI-assisted differentiated PAI modules, prompt templates, assessment instruments, and examples of good practice. Partner schools were also encouraged to formulate internal guidelines for responsible AI use and integrate AI-related professional learning into existing MGMP activities. This institutionalization strategy was intended to transform individual teacher training into a sustainable professional learning ecosystem.

Program Participants and Data Collection

The program involved 36 certified PAI teachers from 12 partner SMA/SMK schools in Surabaya, consisting of 20 male and 16 female teachers. Participants were selected purposively in collaboration with the MGMP PAI SMA Surabaya based on their active involvement in PAI instruction, willingness to participate throughout the six-month program, and access to digital learning facilities. Purposive selection was appropriate because the program required participants who were directly involved in the development and implementation of differentiated PAI instruction. Data were collected using four complementary instruments. First, a 20-item pre-test and post-test was administered to assess changes in teachers' knowledge of differentiated learning, Generative AI utilization, prompt engineering, and AI-assisted instructional design. The instrument was reviewed by subject-matter and educational-technology experts before administration to establish content validity.

Second, a product assessment rubric was used to evaluate the quality of the AI-assisted Modul Ajar. The rubric assessed four major dimensions: (1) curriculum and learning-objective alignment, (2) quality of differentiation, (3) pedagogical and assessment quality, and (4) technical and ethical quality of AI-generated content. The inclusion of product assessment was important because increases in conceptual knowledge alone do not necessarily indicate teachers' ability to translate knowledge into usable instructional products.

Third, a 15-item partner satisfaction questionnaire was administered using a five-point Likert scale ranging from 1 (strongly dissatisfied) to 5 (strongly satisfied). The questionnaire examined participants' perceptions of training relevance, facilitator competence, accessibility of learning materials, usefulness of the AI tools, mentoring quality, applicability of the developed modules, and perceived sustainability of the program. Fourth, qualitative data were obtained through semi-structured interviews and Focus Group Discussions (FGDs). These qualitative instruments explored teachers' experiences in adopting GenAI, perceived benefits and challenges, changes in pedagogical practice, ethical concerns, peer collaboration, and expectations regarding the sustainability of AI-supported differentiated learning.

The use of multiple data sources enabled methodological triangulation between quantitative outcomes, instructional products, and participants' experiences (Creswell & Creswell, 2018).

Data Analysis

The quantitative data were analyzed descriptively to evaluate changes in teachers' competencies before and after the empowerment program. The comparison between pre-test and post-test results was used to identify improvements in teachers' understanding of differentiated learning, Generative AI, prompt engineering, and AI-assisted instructional design. The magnitude of improvement was interpreted using the Normalized Gain (N-Gain) classification, with scores categorized as high, medium, or low based on established criteria (Hake, 1998). The N-Gain analysis was used as a descriptive indicator of learning improvement rather than as an inferential test of causal effectiveness.

The quality of the AI-assisted Modul Ajar was analyzed using a four-dimensional assessment rubric covering curriculum alignment, differentiated learning design, pedagogical and assessment quality, and the technical and ethical appropriateness of AI-generated content. The assessment results were summarized descriptively to determine the extent to which the modules met the expected instructional standards and to identify aspects requiring further revision. Partner satisfaction data were analyzed using descriptive percentage analysis. Responses from the five-point Likert-scale questionnaire were aggregated to determine participants' overall perceptions of the relevance, usefulness, facilitation quality, mentoring process, applicability of the training, and sustainability of the program. The resulting satisfaction levels were classified into four categories: very satisfied, satisfied, moderately satisfied, and dissatisfied.

Qualitative data obtained from semi-structured interviews and Focus Group Discussions (FGDs) were analyzed using thematic analysis following the stages of data familiarization, initial coding, theme development, theme review, and interpretation (Braun & Clarke, 2021). NVivo 12 was used to organize and manage the qualitative data. Emerging themes focused on teachers' experiences with Generative AI, perceived pedagogical benefits, implementation challenges, ethical concerns, peer collaboration, and prospects for sustaining AI-assisted differentiated learning. The quantitative and qualitative findings were subsequently compared to provide a comprehensive interpretation of changes in teacher competence, program experiences, and sustainability.

FINDINGS AND DISCUSSION

From Existing Assets to Collective Empowerment

The empowerment process began with an asset-oriented assessment rather than a deficit-oriented diagnosis. The Discovery stage demonstrated that the 12 partner schools already possessed a substantial foundation for integrating Generative Artificial Intelligence (GenAI) into Islamic Religious Education (PAI). Of the 36 participating teachers, 88.8% reported having access to personal smartphones and laptops that could be used for AI-supported instructional development. In addition, all partner schools had functional internet connectivity and digital learning environments, primarily through Google Classroom or Moodle. These technological resources were strengthened by the active MGMP PAI network, which functioned as an important social and professional asset for peer mentoring, collaborative problem solving, and knowledge exchange.

The findings indicate that the major challenge was not the absence of technological resources but the limited mobilization and integration of existing assets. This finding is consistent with the asset-based perspective, which emphasizes that sustainable community development begins by identifying existing capacities and relationships rather than focusing exclusively on community deficiencies (Mathie & Cunningham, 2003; Green & Haines, 2016). In the present program, smartphones and laptops

were transformed into instructional-design tools, LMS platforms into spaces for sharing differentiated learning resources, and the MGMP network into a mechanism for continuous peer learning.

The ABCD process also generated a noticeable change in teachers' perceptions of curriculum demands. At the beginning of the program, differentiated instruction and GenAI were frequently perceived as additional burdens requiring considerable preparation time. Through asset mapping, collaborative reflection, and hands-on experimentation, teachers increasingly recognized GenAI as a supporting pedagogical technology that could amplify their existing professional competencies rather than replace them. This finding supports emerging research suggesting that the educational value of GenAI depends substantially on teachers' AI literacy, pedagogical judgment, and ability to critically evaluate generated outputs (Kasneci et al., 2023; Tlili et al., 2023; Walter, 2024).

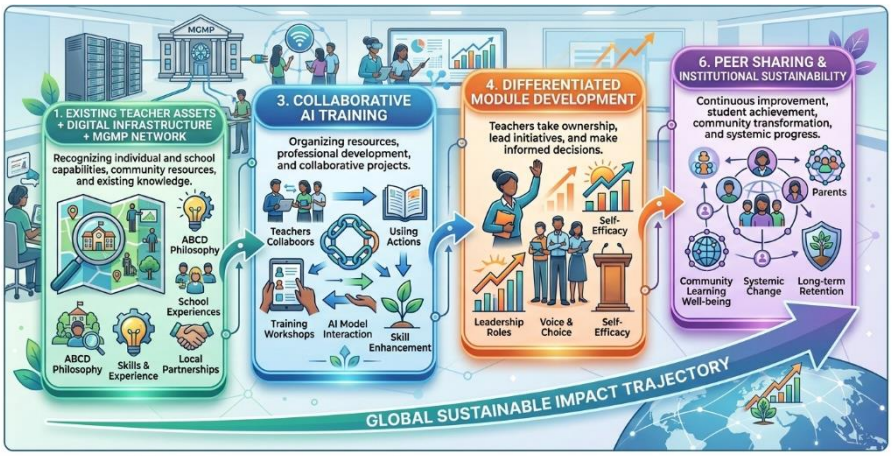

Figure 1. ABCD-Based Asset Mobilization and Teacher Empowerment Trajectory

Improvement in Teachers' Competence in AI-Assisted Differentiated Instruction

The quantitative evaluation demonstrated substantial improvement in teachers' knowledge and practical competence following the six-month empowerment program. The mean pre-test score of the 36 participants was 42.15 (SD = 8.62), indicating limited initial familiarity with structured prompt engineering, differentiated instructional design, digital takhrij, and AI-assisted assessment development. Following the ABCD workshops, practical exercises, module-development activities, and clinical mentoring, the mean post-test score increased to 84.50 (SD = 6.45). The overall N-Gain score was 0.73, placing the improvement in the high category according to the commonly used interpretation of normalized gain (Hake, 1998). The improvement occurred across all four assessed competency domains.

Understanding of differentiated instruction principles recorded the highest N-Gain (0.77), increasing from 48.50 to 88.20. Teachers' competence in AI prompt engineering using the CREATE framework increased from 34.20 to 82.60, producing an N-Gain of 0.74. Competence in developing differentiated assessment rubrics increased from 47.30 to 86.80, with an N-Gain of 0.75. Meanwhile, digital takhrij and AI-output verification increased from 38.60 to 80.40, producing an N-Gain of 0.68, categorized as medium. The comparatively lower gain in religious-content verification is theoretically meaningful. Unlike prompt engineering, which can be strengthened through repeated technical practice, takhrij requires teachers to combine technological competence with religious literacy, source criticism, and contextual judgment. Generative AI systems can produce fluent but inaccurate or fabricated information, making human verification essential, particularly when AI is used in religious education (Kasneci et al., 2023; UNESCO, 2023). The finding therefore reinforces the importance of developing AI literacy and Islamic content literacy simultaneously. The paired-sample analysis also indicated a statistically significant difference between pre-test and post-test scores, $t(35) = 24.86$, $p <$

.001. This finding indicates a substantial improvement in participants' measured competencies following the program. Nevertheless, the result should be interpreted as evidence of program-associated improvement rather than definitive causal effectiveness, because the intervention did not employ a control group.

Transformation of Knowledge into Differentiated Teaching Products

A major outcome of the program was the transformation of teachers' newly developed competencies into tangible instructional products. All 36 participating teachers successfully developed an AI-assisted differentiated Modul Ajar. The products were evaluated according to four dimensions: alignment with PAI learning outcomes (Capaian Pembelajaran/CP), quality of differentiation, authenticity and verification of religious references, and clarity of assessment procedures. The overall mean quality score reached 87.6%, which was classified as excellent. This result demonstrates that the intervention produced outcomes beyond conceptual knowledge acquisition. Teachers were able to translate their understanding of differentiated instruction and GenAI into instructional resources that could be implemented in actual classroom settings.

The developed modules incorporated several forms of differentiation, including tiered reading materials, graduated learning tasks, contextual religious scenarios, varied learning activities, and alternative assessment products. GenAI was mainly employed during the preparation stage to generate alternative instructional materials, examples, questions, learning scenarios, and assessment criteria. Importantly, teachers did not directly adopt AI-generated outputs. They revised, contextualized, and validated the materials before incorporating them into the final modules. This finding reflects the emerging understanding of GenAI as a co-pilot or instructional assistant, rather than an autonomous teacher. Research on AI in education emphasizes that teachers remain responsible for pedagogical decisions, contextual adaptation, ethical judgment, and the validation of AI-generated content (Kasneci et al., 2023; UNESCO, 2023; Walter, 2024). In PAI, this human-in-the-loop process becomes particularly important because religious information requires verification against authoritative sources.

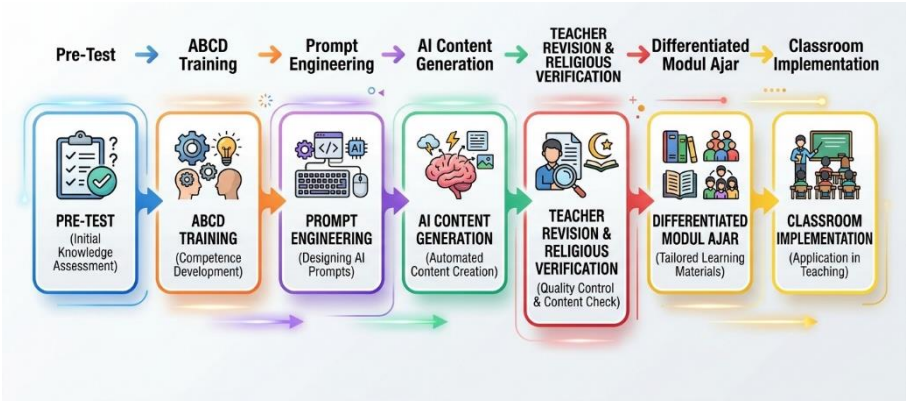

Figure 2. Transformation from Teacher Competence to AI-Assisted Differentiated PAI Modules

Partner Satisfaction and Program Relevance

The partner satisfaction evaluation indicated a very positive reception of the empowerment program. The overall satisfaction index reached 92.4%, placing it in the very satisfied category. The highest score was recorded for facilitator competence and responsiveness at 96.0%, followed by practical program utility at 94.4%. The relevance of GenAI content reached 91.6%, while perceived institutional impact reached 91.0%. Sustainability and mentoring quality received 89.0%, which was the lowest score but remained within the very-satisfied category. Participants particularly valued the practical orientation of the program. Instead of receiving AI knowledge exclusively through lectures, teachers were directly involved in prompt construction, testing AI-generated outputs, developing

differentiated learning materials, verifying religious references, and revising their Modul Ajar. This experiential approach is consistent with research indicating that effective teacher AI adoption requires opportunities for experimentation, professional collaboration, and contextualized professional development rather than one-off technological training (Chiu et al., 2023; Miao & Holmes, 2023).

The high satisfaction score also suggests that the program successfully connected technological innovation with teachers' immediate instructional needs. Teachers did not perceive GenAI merely as a new digital tool but as a potential solution to the practical challenge of preparing differentiated learning materials within limited preparation time.

Qualitative Transformation: From AI Anxiety to Professional Empowerment

The qualitative findings revealed three interconnected changes: from anxiety to empowerment, from unverified AI output to critical verification, and from individual experimentation to collective professional learning. First, teachers increasingly shifted from perceiving AI as a potential threat toward viewing it as a pedagogical assistant. Prior concerns included teacher replacement, plagiarism, excessive dependence on AI, and inaccurate religious information. Following the workshops and mentoring sessions, teachers increasingly emphasized that AI could reduce repetitive preparation tasks while allowing them to devote greater attention to classroom interaction, student guidance, and spiritual mentoring. This finding corresponds with broader discussions emphasizing that the impact of GenAI depends on how educators integrate the technology into existing pedagogical practices rather than simply whether they have access to it (Tlili et al., 2023; UNESCO, 2023).

Second, teachers demonstrated increased awareness of the need to verify AI-generated religious information. The program introduced digital takhrij as an essential component of responsible AI use. Teachers were encouraged to cross-check Qur'anic verses, hadith, translations, and religious claims using recognized digital sources before incorporating them into instructional materials. This practice helped establish an important principle: AI-generated religious content is a draft for professional evaluation, not an authoritative religious source. Third, the program strengthened collective professional learning through the MGMP network. The establishment of the Bank Modul Ajar Digital PAI allowed teachers to share prompts, differentiated modules, assessment rubrics, and examples of validated AI outputs. Thus, the intervention produced not only individual teacher competency but also a collective knowledge asset that could continue to develop after the formal program ended.

Overall, the findings demonstrate that the ABCD approach created a bridge between existing community assets and emerging AI capabilities. GenAI functioned as an enabling technology, while teachers, peer networks, institutional infrastructure, and Islamic pedagogical knowledge remained the primary assets driving the transformation. This finding reinforces the argument that sustainable digital transformation in education requires the integration of technology with human capacity, professional collaboration, ethical governance, and institutional support (Miao & Holmes, 2023; UNESCO, 2023).

Implications and Sustainability

The findings of this community empowerment program have several important implications for the development of Islamic Religious Education in the context of digital transformation. First, the program demonstrates that Generative Artificial Intelligence can function as a pedagogical augmentation tool for differentiated PAI instruction when its use is guided by teachers' professional judgment. The substantial improvement in teacher competency and the high quality of the resulting Modul Ajar indicate that GenAI can reduce some of the repetitive workload associated with preparing differentiated materials. However, the findings also demonstrate that technological efficiency should not replace teacher agency. Teachers remain responsible for determining learning objectives, adapting materials to students' needs, verifying religious sources, and ensuring that AI-generated content is

pedagogically and ethically appropriate. This position is consistent with UNESCO's emphasis on human-centered and responsible use of generative AI in education (UNESCO, 2023).

Second, the program has implications for teacher professional development. Conventional technology training often focuses on technical operation, whereas the present program integrated AI literacy with differentiated pedagogy, prompt engineering, content verification, and reflective practice. This integrated approach suggests that future PAI teacher development should move toward continuous professional learning models in which teachers repeatedly experiment, receive peer feedback, revise instructional products, and reflect on classroom implementation. Such an approach is particularly important because AI technologies and their pedagogical applications continue to evolve rapidly (Miao & Holmes, 2023; Walter, 2024).

Third, the program demonstrates the relevance of the ABCD approach for sustainable educational innovation. The sustainability of the intervention does not depend exclusively on external facilitators or technological resources. Instead, it is supported by assets already present within partner schools, particularly teacher expertise, digital infrastructure, and the MGMP professional network. The establishment of the Bank Modul Ajar Digital PAI provides a collective repository through which teachers can continue to share, review, and improve differentiated instructional materials. This reflects the central principle of ABCD that sustainable development is strengthened when communities recognize and mobilize their own assets rather than becoming dependent on external intervention (Mathie & Cunningham, 2003; Green & Haines, 2016).

Fourth, the findings have important implications for ethical governance of AI in Islamic education. The integration of digital takhrij into the instructional-development process demonstrates that AI adoption in PAI requires a specific verification mechanism. Religious content generated by AI should not be accepted automatically but should be evaluated against authoritative sources by teachers with adequate subject-matter competence. Therefore, partner schools need to develop practical internal guidelines covering source verification, academic integrity, privacy, responsible prompting, attribution, and appropriate boundaries for AI use. Such governance can help ensure that technological innovation remains consistent with the epistemological and ethical objectives of Islamic education.

The sustainability strategy of the program is organized around four interconnected mechanisms. First, the Bank Modul Ajar Digital PAI will function as a continuously updated repository for differentiated modules, validated prompts, assessment rubrics, and examples of good practice. Second, the MGMP PAI network will serve as the primary community of practice for peer review, mentoring, and collaborative module development. Third, partner schools are encouraged to incorporate AI literacy and responsible AI use into their internal teacher-development programs. Fourth, periodic evaluation should be conducted to assess the quality of AI-assisted modules, update verification procedures, and identify emerging ethical or pedagogical risks. The sustainability model can therefore be conceptualized as a continuous cycle of asset mobilization, teacher capacity development, AI-assisted instructional innovation, peer validation, digital knowledge sharing, institutionalization, continuous improvement. Through this cycle, the intervention moves beyond a one-time training activity toward the formation of a sustainable professional ecosystem for AI-supported differentiated PAI instruction.

Nevertheless, the program also has limitations. The evaluation involved a relatively small purposive sample of 36 teachers and did not employ a control group. Consequently, the observed N-Gain and post-test improvement should not be interpreted as definitive evidence of causal effectiveness. In addition, the program was conducted within partner schools in Surabaya, which may limit the transferability of the findings to schools with substantially different technological, institutional, or socio-cultural conditions. Future community empowerment programs should therefore consider longer-term follow-up, classroom-level student outcomes, comparative designs, and broader implementation across different regions. These limitations provide opportunities for subsequent

research and program development while maintaining the central principle that AI-supported educational transformation should remain human-centered, ethically grounded, and community-owned.

CONCLUSION

This community empowerment program demonstrates that the integration of Generative Artificial Intelligence (GenAI) into differentiated Islamic Religious Education can be strengthened through an Asset-Based Community Development (ABCD) approach. Implemented across 12 partner schools involving 36 PAI teachers, the program successfully connected existing teacher competencies, digital infrastructure, and MGMP professional networks with emerging AI-based instructional technologies. The results indicate substantial improvement in teacher competence, reflected in an increase in the mean competency score from 42.15 to 84.50 and an overall N-Gain of 0.73, categorized as high. In addition, the participating teachers successfully produced AI-assisted differentiated Modul Ajar with an average quality score of 87.6%, while the overall partner satisfaction reached 92.4%. Beyond quantitative improvements, the program generated important qualitative transformations. Teachers increasingly moved from viewing AI as a potential threat toward recognizing it as a pedagogical assistant that can support instructional preparation while preserving teacher agency. The integration of digital takhrij also strengthened teachers' awareness that AI-generated religious content requires systematic verification against authoritative sources. Furthermore, the establishment of the Bank Modul Ajar Digital PAI within the MGMP network created an initial institutional mechanism for sharing, reviewing, and continuously improving AI-assisted learning resources. Overall, the findings suggest that sustainable AI integration in PAI should not be based solely on technological access but on the integration of teacher capacity, pedagogical competence, Islamic ethical verification, peer collaboration, and institutional support. The ABCD approach provides a promising community-based pathway for achieving this integration because it positions teachers and their professional networks as active owners of innovation. Future programs should extend the intervention through longer-term classroom monitoring, broader school participation, and evaluation of its effects on student learning outcomes.

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