

TRANSFORMATIVE LEARNING THROUGH AI INTEGRATION AND CURRICULUM CONTEXTUALIZATION IN VALUES EDUCATION

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Abstract

This study examined how the integration of artificial intelligence (AI) with curriculum contextualization can catalyze transformative learning in Values Education (VALED) among 17 VALED teachers at Taysan San Jose Integrated National High School, Taysan, Batangas Province, Philippines (DepEd). Participants engaged in a two-activity management program, such as Bias Mapping and Values Alignment workshop; Localized AI Lesson Co-design and Classroom Trial, while the researcher collected surveys, semi-structured interviews, lesson-plan audits, classroom observations, and teacher reflective journals. Findings indicate that AI-generated scenarios, when deliberately localized and mediated by teacher facilitation, functioned as catalysts for disorienting dilemmas that prompted critical reflection and dialogic moral reasoning consistent with transformative learning theory; teachers' self-efficacy in designing AI-informed lessons increased substantially and improved the relevance. Persistent barriers included ethical concerns (privacy and bias), limited infrastructure, and time constraints for contextualization. The study concludes that AI can support values education only when embedded in teacher-centered co-design, ethical safeguards, and institutional support, and recommends sustained professional development, clear AI governance, and longitudinal evaluation of students' moral outcomes.

Keywords: transformative learning, values education, AI integration, curriculum contextualization, teacher professional development

Introduction

Artificial intelligence (AI) is increasingly present in educational practice as a tool for content generation, personalization, and scenario simulation. In Values Education (VALED), which aims to foster moral reasoning, character formation, and ethical action, AI offers novel affordances: it can generate diverse moral dilemmas, simulate stakeholder perspectives, and provide differentiated prompts for reflection. Despite these possibilities, teachers often face uncertainty about how to meaningfully integrate AI into values-based instruction. AI outputs are not inherently values-aligned or contextually appropriate; they require teacher mediation, curricular alignment, and ethical safeguards to support meaningful moral learning.

Transformative learning theory foregrounds disorienting dilemmas, critical reflection, and action as mechanisms for perspective transformation (Mezirow, 1991; Taylor, 2008). When AI is used to generate dilemmas or multiple perspectives, it may provide stimuli that, if mediated by dialogic pedagogy and reflective practice, lead to transformative shifts in learners' moral frames. Yet, the sociotechnical nature of AI means that its educational value depends on teacher agency, institutional governance, and contextual adaptation (Luckin et al., 2016; Selwyn, 2019; UNESCO, 2021).

This study assesses whether and how AI integration will be paired with curriculum contextualization to produce transformative learning in VALED among 17 DepEd teachers at Taysan San Jose Integrated National High School. The research tests a two-activity management program designed to contextualize AI outputs for local values education and documents teacher perceptions, lesson quality, and classroom indicators of student reflection.

Statement of the Problem

This study sought to answer the following:

1. How does transformative learning manifest in Values Education when AI tools are used to generate disorienting dilemmas and scaffold student reflection?

2. To what extent are AI-driven lesson plans and localized instructional materials effective pedagogical innovations in VALED, as perceived and enacted by the 17 participating teachers?
3. What are the principal challenges faced by the 17 teachers in aligning moral development with rapid technological shifts, including ethical, pedagogical, and infrastructural barriers?
4. Prepare the management program that uses AI and curriculum contextualization to catalyze transformative learning in Values.

Scope and Delimitations

This study focused on the management program and classroom practices for integrating artificial intelligence (AI) into Values Education (VALED) at Taysan San Jose Integrated National High School, Taysan, Batangas Province, during the school year 2025–2026. The research aimed to assess how AI-driven lesson plans and localized instructional materials support transformative learning, identify the ethical, pedagogical, and infrastructural challenges faced by the 17 participating VALED teachers, and pilot a school-level management program (Bias Mapping & Values Alignment; Localized AI Lesson Co-design & Classroom Trial) to strengthen teacher capacity and governance. The study was delimited to the voluntary participation of 17 VALED teachers

Review of Related Literature

Transformative learning theory posits that learners undergo perspective transformation when confronted with disorienting dilemmas, engage in critical reflection, and enact new meaning perspectives through dialogue and action (Mezirow, 1991; Taylor, 2008). In values education, pedagogies that foreground real-world dilemmas, structured reflection, and dialogic interaction have been shown to promote moral reasoning and perspective shifts (Brookfield, 2012; Lovat & Toomey, 2009). Teachers act as facilitators who scaffold reflection and ethical deliberation rather than as mere transmitters of values.

AI Integration and the Curriculum AI in education can automate routine tasks, generate differentiated materials, and simulate complex scenarios that support higher-order thinking (Luckin et al., 2016). Research highlights AI's potential to personalize learning and to produce diverse prompts that stimulate critical thinking (OECD, 2021). However, scholars caution that AI outputs may reflect biases, lack cultural nuance, and require teacher oversight to ensure pedagogical alignment (Selwyn, 2019; UNESCO, 2021). Effective AI integration is, therefore, sociotechnical: it depends on teacher agency, curriculum alignment, and institutional governance.

Challenges in Aligning Moral Development with Technological Shifts. In an increasingly AI-augmented educational landscape, managers face the novel challenge of mitigating "intellectual dependency," wherein students might outsource their moral reasoning to generative AI tools. To address this, the Department of Education recently issued DepEd Order No. 003, s. 2026, establishing the "Foundational Guidelines on Artificial Intelligence in Basic Education" (Department of Education, 2026a). This mandate strictly classifies AI as a complementary, human-centered tool, operating under three pillars: AI in Education, Education on AI, and AI for Education Systems. While tools like ChatGPT and Canva are permitted to personalize learning and assist teachers, they require strict safeguards, transparency, and human oversight to prevent data breaches and maintain academic integrity (Coin Geek, 2026). Commonly reported challenges include ethical concerns (privacy, bias, accountability), the digital divide (access and infrastructure), teacher readiness (technical and pedagogical skills), and potential misalignment between algorithmic outputs and local values (Selwyn, 2019; UNESCO, 2021). Addressing these challenges requires professional development, participatory curriculum design, and clear policies on AI use in classrooms.

Management Programs and Contextualization Strategies. Programmatic approaches that combine workshops, co-design sessions, and classroom trials have been effective in contextualizing new pedagogies (Fullan, 2016). For AI integration in values education, recommended activities include **bias**

mapping (identifying potential AI biases and cultural mismatches) and **co-design labs** where teachers adapt AI outputs to local contexts and trial them with students (Luckin et al., 2016; UNESCO, 2021).

Theoretical Framework

The theoretical insights of this research draw from three interrelated theoretical traditions that directly address the study's focus: Transformative Learning Theory, a sociotechnical view of Artificial Intelligence in Education, and Curriculum Contextualization. Each theory provides conceptual lenses and practical prescriptions that, together, justify the intervention (the management program) and guide the evaluation of AI-enhanced, localized VALED lessons.

Transformative Learning Theory (Jack Mezirow). Transformative Learning Theory explains how learners revise their frames of reference when confronted with disorienting dilemmas, engage in critical reflection, participate in discourse, and enact new meaning perspectives through intentional action. The theory emphasizes processes such as dilemma generation, reflective critique of assumptions, dialogic validation, and committed action, which are central to values education. Applied to this study, Mezirow's framework positions AI-generated moral scenarios as potential catalysts for perspective change: when students experience cognitive dissonance or moral ambiguity in a classroom task, structured reflection and facilitated dialogue can lead to deeper moral reasoning and changed ethical commitments. The theory also highlights the teacher's role as a facilitator of reflection and the need for iterative cycles of experience, reflection, and action, principles that inform the design of the Bias Mapping and Co-design activities.

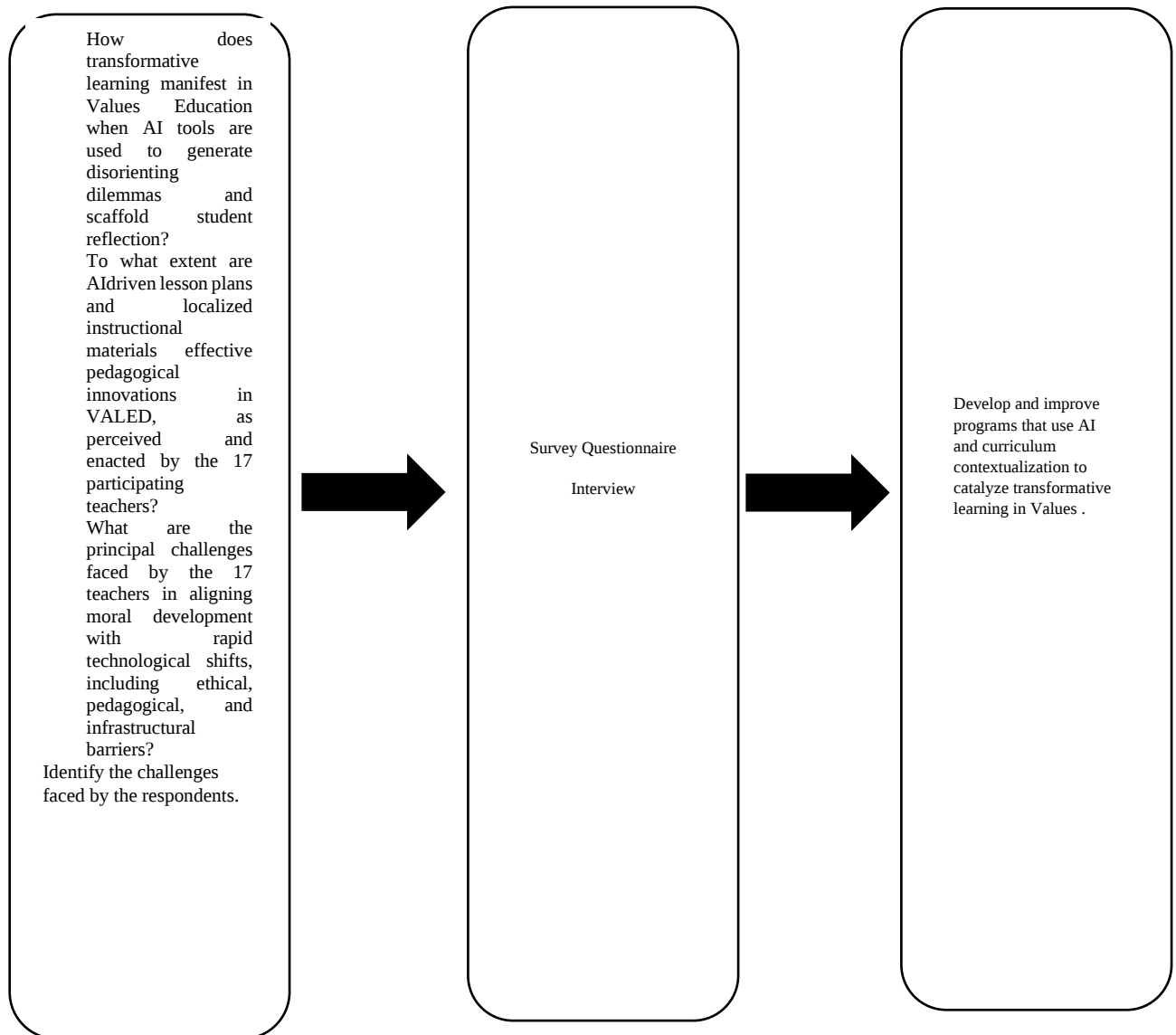
The sociotechnical perspective treats AI not as a neutral, purely technical tool but as an artifact whose outputs reflect data sources, design choices, and embedded assumptions; its educational effects therefore depend on human mediation, institutional arrangements, and ethical governance. This view foregrounds issues of bias, transparency, accountability, and the limits of algorithmic authority. For the present study, the sociotechnical lens justifies teacher-centered interventions that prompt re-engineering, bias mapping, and ethical protocols because these practices mediate how AI stimuli enter the classroom. It also explains why institutional supports (professional development, policies, infrastructure) are necessary: without them, AI outputs risk being culturally insensitive, misleading, or uncritically accepted by learners, undermining the goals of VALED.

Curriculum contextualization theory emphasizes adapting curricular content and pedagogy to local cultural, social, and institutional realities to make learning meaningful and relevant to learners lived experiences. Contextualization involves selecting culturally resonant examples, aligning tasks with community values, and ensuring language and scenarios reflect students' social worlds. In this study, curriculum contextualization is the mechanism that converts generic AI outputs into locally meaningful disorienting dilemmas. It prescribes concrete practices—localizing names and settings, embedding community value anchors, and aligning scenarios with DepEd VALED objectives—that teachers enact during the co-design phase to ensure AI-generated prompts provoke authentic moral reflection rather than confusion or alienation.

Combining these three strands yields an integrated theoretical framework with clear propositions: (1) **AI can generate potential disorienting dilemmas** that stimulate perspective questioning (Transformative Learning + AI); (2) **teacher mediation and ethical filtering** are necessary to transform AI outputs into pedagogically effective dilemmas (Sociotechnical AI); and (3) **curriculum contextualization** is required for those dilemmas to be perceived as relevant and to trigger authentic moral reflection (Contextualization). Institutional supports such as professional development, governance protocols, and infrastructure serve as enabling conditions that sustain iterative cycles of experience → reflection → action.

The framework maps directly onto the study's methods: AI-generated scenarios (input) are audited and localized (curriculum contextualization) and then mediated by teachers through prompt re-engineering and facilitation (sociotechnical mediation). Transformative outcomes (output) are measured as indicators of disorienting experience, depth of critical reflection in journals and discussions, and observed or reported ethical commitments. The management program (Bias Mapping; Localized Co-design; Classroom Trials; Monitoring & Governance) is thus both an intervention and an operational embodiment of the theoretical claims.

Conceptual framework



Methodology

Research Design

The study utilized mixed-methods action research, with a descriptive quantitative strand, to evaluate how AI integration and curriculum contextualization affect transformative learning in VALED and to pilot a school-level management program.

Research Design

The study utilized a researcher-made questionnaire as the primary data-gathering instrument, complemented by semi-structured interviews, a focus group discussion guide, a teacher reflective journal template, and a classroom observation protocol.

Questionnaire. The main instrument used in gathering data was the researcher-made questionnaire, which consisted of three parts.

Part I: Transformative Learning Manifestations

Part II: Effectiveness of AI-Driven Lesson Plans and Localized Materials

Part III: Effectiveness of AI-Driven Lesson Plans and Localized Materials

Derived from study objectives, literature, and pilot interviews; iteratively reviewed by adviser and panel.

Construction. The instrument was developed based on the study's objectives, interviews, and relevant literature related to **Transformative Learning through AI Integration and Curriculum Contextualization in Values Education**

Validation. Permissions were secured from the school principal and department head before the recruitment began; eligible teachers were invited to participate and provided informed consent. Baseline data collection involved administering a pre-program questionnaire and conducting initial interviews to capture participants' profiles, prior experience, and expectations.

The intervention comprised a Bias Mapping & Values Alignment workshop, a co-design period, and classroom trials, during which lesson artifacts, observation notes, and teacher journals were collected for ongoing documentation. After the trials, a post-program questionnaire, follow-up interviews, and a focus group discussion were conducted. All data were retrieved, stored securely, and anonymized before analysis.

Administration. The researcher sought permission to conduct the study by submitting a formal letter to the school principal through the department head. Once permission was granted, the researcher personally approached management to request approval to administer the questionnaire. The survey was then distributed online via Google Forms to 17 teachers handling values education. In compliance with the Data Privacy Act of 2012, the researcher informed the respondents that their information would be kept confidential.

Scoring of Responses. The questionnaire items were graded. Use a clear Likert scale with an interpretation key. The scale was used to evaluate how AI integration and curriculum contextualization affect transformative learning in VALED and to pilot a school-level management program.

Interview. Informal interviews with 17 teachers were conducted to validate and enrich the responses from the questionnaires. These interviews took place after the completed questionnaires were retrieved.

Focus Group Discussion. Interviews will be conducted after retrieval of the completed questionnaires, and the focus group discussion will be scheduled following the classroom trials; this sequencing allows initial survey findings and trial observations to inform deeper qualitative inquiry. A purposive subset of participants was selected to include diverse perspectives, such as high and low adopters, and will be invited for in-depth interviews and to join the FGD. The interviews and FGDs will validate and enrich the survey results, probe ethical concerns and implementation challenges, and solicit practical feedback on program feasibility and recommendations to refine the management program.

Data Gathering Procedures

To gather the necessary data, the researcher prepared a formal request letter addressed to the school principal of Taysan San Jose Integrated National High School, specifically seeking approval to conduct the study with 17 Values Education teachers. The letter was personally delivered to ensure clarity regarding the study's objectives. Once permission was granted, the questionnaires were distributed to the respondents and promptly collected after completion. The responses were then tallied, tabulated, and subjected to statistical analysis by questionnaire item. To enrich and validate the quantitative findings, the researcher also conducted informal interviews and a focus group discussion, thereby providing qualitative support and confirmation of the results.

Study Limitations and Ethical Considerations

The study was conducted with 17 Values Education teachers and was limited to the identified research variables, focusing on their responses to the administered questionnaire. Prior to participation, teachers were fully informed about the nature of the study, the intended use of the data, and the possible implications of their involvement. Each participant provided active, signed consent, acknowledging their rights to access their information and their option to withdraw at any time. They were assured that their individual responses would remain private and be used solely for research purposes. Throughout the entire process, strict confidentiality was maintained to safeguard all participant information.

Results and Discussion

These counts indicate that localized AI scenarios reliably provoked cognitive conflict and moral questioning but also surfaced frequent worries about privacy and bias. The relatively low number of action commitments suggests that reflection often did not immediately translate into sustained behavioral plans. Together, the findings imply the program effectively stimulates reflection but requires stronger facilitation, follow-up, and institutional support to convert reflection into lasting ethical action.

SOP 1: How does transformative learning manifest in Values Education when AI tools are used to generate disorienting dilemmas and scaffold student reflection?

Transformative Learning Manifestations

Items	WM	VI
1. AI-generated dilemmas prompted my students to critically reflect on their values.	3.52	SA
2. Students reconsidered their moral perspectives after engaging with AI-mediated scenarios.	2.88	A
3. AI-based activities created disorienting dilemmas that challenged students' existing beliefs.	3.41	A
4. Reflective discussions following AI lessons deepened students' understanding of values.	2.94	A
5. Students demonstrated dialogic moral reasoning during AI-facilitated classroom activities.	3.76	SA
6. Exposure to multiple perspectives generated by AI enhanced students' empathy and openness.	3.68	SA

7. I observed transformative shifts in how students view ethical issues after AI-integrated lessons.	3.47	A
Composite Mean	3.38	A

The weighted mean of 3.38 for SOP 1 indicates that teachers generally agreed to strongly agreed that transformative learning manifested in Values Education when AI tools were used to generate disorienting dilemmas and scaffold student reflection. This high level of agreement suggests that AI integration was effective in prompting students to critically examine their values, reconsider moral perspectives, and engage in dialogic moral reasoning

SOP 2: To what extent are AI-driven lesson plans and localized instructional materials effective pedagogical innovations in VALED, as perceived and enacted by the 17 participating teachers?

Effectiveness of AI-Driven Lesson Plans and Localized Materials

Items	WM	VI
1. AI-driven lesson plans improved the relevance of Values Education lessons.	3.82	SA
2. Localized instructional materials made AI outputs more culturally appropriate.	4.00	SA
3. AI-supported lessons enhanced student engagement in moral discussions.	3.70	SA
4. AI integration improved the overall quality of my teaching practice.	3.58	SA
5. Lesson co-design activities increased my confidence in using AI for teaching.	3.40	SA
6. AI-driven materials supported differentiated instruction for diverse learners.	3.82	SA
7. I consider AI-driven lesson plans and localized materials effective pedagogical innovations.	4.00	SA
Composite Mean	3.76	SA

The weighted mean of **3.76** for SOP 2 reveals that teachers strongly agree that AI-driven lesson plans and localized instructional materials are effective pedagogical innovations in Values Education. Teachers perceived that AI-driven lesson plans, when localized to reflect cultural contexts and values, significantly improved lesson relevance and student engagement. The co-design process, which involved adapting AI outputs to local names, settings, and moral scenarios, was considered crucial to making lessons meaningful and relatable. Moreover, teachers reported that these innovations enhanced their confidence in lesson preparation, supported differentiated instruction, and contributed to more dialogic and reflective classroom practices.

SOP 3: What are the principal challenges faced by the 17 teachers in aligning moral development with rapid technological shifts, including ethical, pedagogical, and infrastructural barriers?

Challenges in Aligning Moral Development with Technological Shifts

Items	WM	VI
1. Limited infrastructure (devices, internet) hindered effective AI integration.	4.00	SA
2. Time constraints made contextualization of AI outputs difficult.	3.41	SA
3. Ethical concerns (bias, privacy) limited my use of AI in teaching.	3.76	SA
4. Lack of institutional support reduced the sustainability of AI integration.	3.88	SA
5. Insufficient professional development opportunities restricted my ability to use AI effectively.	4.00	SA
6. Students' varying digital literacy levels posed challenges in AI-based lessons.	3.70	SA

7. Technical issues (software glitches, connectivity problems) disrupted AI use.	4.00	SA
Composite Mean	3.82	SA

The weighted mean of **3.82** for SOP 3 indicates that teachers strongly agree that they face significant challenges in aligning moral development with rapid technological shifts. Teachers consistently highlighted ethical concerns, such as student data privacy and cultural bias embedded in AI outputs, as barriers to effective integration. Pedagogically, many reported difficulties in facilitating reflective dialogue, re-engineering prompts, and managing the additional time required to contextualize AI scenarios. Infrastructural constraints, including limited access to devices, intermittent connectivity, and technical glitches which further restricted the fidelity and scale of implementation.

SUMMARY

Teachers reported that AI-generated scenarios, when localized, produced rich moral dilemmas that prompted students' questioning and perspective-taking. For example, an AI-generated case about online dishonesty, adapted to local social media practices, led students to role-play and critically examine community norms. Teachers described moments where students expressed surprise at alternative viewpoints—an indicator of disorienting experience leading to reflection (Mezirow, 1991).

AI-driven lesson plans were judged effective only when teachers actively mediated and localized the outputs. Raw AI prompts often lacked local language, cultural references, or relevance, so teachers who re-engineered prompts (changing names, settings, and consequences) produced lessons that elicited deeper student engagement and reflection. In practice, the co-design process functioned as the critical bridge between generic. The implication is that AI can be a useful pedagogical innovation, but its classroom value depends on teacher time, skill in contextualization, and institutional support for co-design.

Teachers faced ethical, pedagogical, and infrastructural challenges when aligning moral development with rapid technological change. They worried about student data privacy, embedded cultural bias in AI outputs, and the danger of students accepting AI-generated moral positions without critical scrutiny. Pedagogically, meaningful facilitation and follow-up (to turn reflection into action) demand extra time, prompt-reengineering skills, and assessment strategies that many teachers lack. Practically, limited devices and unreliable connectivity constrained fidelity and scale, indicating a need for targeted PD, simple governance protocols, and basic infrastructure investments.

Conclusion

The findings indicate that AI can support transformative learning in VALED when used as a mediated tool rather than an authoritative source. AI-generated dilemmas can function as disorienting experiences that, through guided reflection and dialogic pedagogy, lead to perspective shifts and moral reasoning—core elements of transformative learning (Mezirow, 1991; Taylor, 2008). However, AI's educational value is realized only through teacher agency: prompt re-engineering, contextual adaptation, and facilitation of reflective dialogue (Luckin et al., 2016; Selwyn, 2019).

Ethical concerns and infrastructure limitations align with the broader literature on AI in education (UNESCO, 2021; OECD, 2021). Addressing these requires multi-level interventions: professional development in AI ethics and prompt engineering, school policies on data privacy and AI use, and targeted investments in infrastructure.

AI integration, when combined with deliberate curriculum contextualization and teacher mediation, can catalyze transformative learning in Values Education. The pilot with 17 VALED teachers demonstrated that AI-driven lesson plans—once localized and facilitated through reflective pedagogy—can increase lesson relevance and stimulate student moral reflection. Major barriers include ethical concerns, limited infrastructure, and uneven teacher readiness. A focused management program comprising bias mapping and co-design activities improved teacher competence and produced contextually appropriate AI-informed lessons; however, sustained impact requires institutional support, ongoing professional development, and clear ethical guidelines.

Recommendations

1. Institutionalize the two-activity model (Bias Mapping & Values Alignment; Localized Co-design & Trial) and allocate regular time for teacher collaboration.
2. Develop and disseminate clear ethical guidelines for AI use in classrooms, including data privacy, bias mitigation, and transparency about AI-generated content.
3. Invest in infrastructure (reliable connectivity, shared devices, secure platforms) prioritized for schools piloting AI in VALED.
4. Provide sustained professional development on ethical AI literacy and dialogic facilitation techniques tailored to VALED.
5. Establish teacher co-design communities to share localized prompts, lesson adaptations, and classroom evidence.
6. Embed reflective assessment practices to document student perspective shifts and moral reasoning over time.

References

- Brookfield, S. D. (2012). *Teaching for critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
- CoinGeek. (2026, February 25). *Philippines: DepEd approves AI use in public schools*. CoinGeek. <https://coingeek.com/philippines-deped-approves-ai-use-in-public-schools/>
- Fullan, M. (2016). *The new meaning of educational change* (5th ed.). Teachers College Press.
- Lovat, T., & Toomey, R. (2009). *Values education and quality teaching: The double helix effect*. Springer.
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. UCL Knowledge Lab.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.
- OECD. (2021). *The impact of AI on education and skills: Policy considerations*. Organisation for Economic Co-operation and Development.
- Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
- Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education*, 2008(119), 5–15.
- UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. United Nations Educational, Scientific and Cultural Organization.