



Evolving Teacher Roles in Artificial Intelligence-Driven Learning: A Phenomenological Study in Social Studies Education

Isaac Deonwel G. Falcis¹, and Maricar U. Juaneza²

^{1,2}University of Southern Mindanao, Philippines

Article Info

Article history:

Received Oct 3, 2025

Revised Dec 8, 2025

Accepted Jan 30, 2026

Online First Jan 31, 2026

Keywords:

Artificial Intelligence
Instructional Delivery
Phenomenology
Teachers' Perceptions

ABSTRACT

Purpose of the study: This study examined how Araling Panlipunan (Social Studies) teachers perceive and experience the integration of Artificial Intelligence in their instructional practice, focusing on public secondary schools in Matalam, Cotabato to capture localized insights on digital adaptation in rural contexts.

Methodology: Using a phenomenological qualitative design, purposively selected teachers were interviewed through semi-structured conversations to explore their lived experiences with Artificial Intelligence tools, and thematic analysis was applied to identify recurring patterns in their narratives.

Main Findings: Findings revealed that teachers view Artificial Intelligence as a helpful and efficient instructional assistant, particularly in lesson planning, content enrichment, and generating teaching strategies that support engagement and provide diverse, updated resources. Despite these advantages, teachers emphasized AI's limitations in addressing students' emotional and social needs, concerns about content accuracy, and challenges related to technical access and reliability. The discussion highlights that while Artificial Intelligence is perceived as a valuable supplement to teaching, it cannot replace the essential human capacities of creativity, discernment, ethical judgment, and contextual understanding that underpin effective instruction.

Novelty/Originality of this study: The study underscores the need for context-sensitive professional development, clearer institutional guidelines, and supportive infrastructure to ensure that Artificial Intelligence strengthens rather than undermines teacher agency and the human dimension of Social Studies education.

This is an open access article under the [CC BY](https://creativecommons.org/licenses/by/4.0/) license



Corresponding Author:

Isaac Deonwel G. Falcis

University of Southern Mindanao, Kabacan, Cotabato, Philippines

Email: jdgfalcis@usm.edu.ph

1. INTRODUCTION

Artificial Intelligence has increasingly reshaped educational systems worldwide, offering significant opportunities for instructional enhancement while introducing complex pedagogical challenges [1]. Within classrooms, AI-driven tools are being adopted to automate assessment, support lesson design, and provide personalized learning pathways, aligning education with broader trends in automation and data-driven decision-making [2]. These developments have raised concerns regarding the evolving roles of teachers, as automation of tasks such as grading, tutoring, and content generation prompts questions about the degree to which traditional instructional responsibilities may be displaced or redefined [3]. As a result, attention has shifted toward understanding how teachers adapt to changing professional expectations in AI-supported environments.

Existing research has identified persistent barriers to Artificial Intelligence integration, including limited training and low teacher confidence [4], the tendency for technological goals to overshadow pedagogical priorities

[5], and risks of passive learning resulting from excessive reliance on automated systems [4]. Despite these concerns, scholars have noted AI's capacity to expand access to diverse learning resources and support individualized instruction [6], [7]. Teachers have been recognized as critical agents whose perceptions and decisions significantly influence the success of Artificial Intelligence initiatives [6], [8]. However, emerging literature has also emphasized that Artificial Intelligence affects not only instructional processes but also social and ethical dimensions of schooling. Artificial Intelligence-mediated environments may reduce opportunities for interpersonal interaction and value formation [9], while algorithmic systems may introduce cultural biases with implications for civic education and identity development [10].

Moreover, recent literature underscores that Artificial Intelligence's influence extends beyond instructional efficiency, significantly affecting social values, teacher-student interactions, and moral education. Scholars have emphasized caution that Artificial Intelligence-mediated learning environments may inadvertently weaken interpersonal relationships by reducing opportunities for spontaneous dialogue and empathy-building [11]. Also another scholar argue that algorithmic feedback—while immediate and personalized—cannot replace the nuanced moral guidance and value formation facilitated by human teachers [12]. Furthermore, study highlighted concerns that Artificial Intelligence systems may encode cultural biases, influencing students' attitudes toward civic issues, identity formation, and community participation, areas that are especially central to Social Studies education [13]. These findings emphasize that the integration of Artificial Intelligence raises not only pedagogical questions but also ethical, relational, and societal challenges that teachers must carefully navigate.

Studies examining Artificial Intelligence in relation to teacher identity and professional ethics have highlighted issues such as increased “datafication” of education [14], the cultural and political values embedded in technology adoption [15], and tensions between human judgment and automated analytics in both higher education and K-12 settings [16]-[18]. Persistent digital divides further shape unequal access to Artificial Intelligence enabled learning environments. Although these studies underscore the transformative potential of Artificial Intelligence, they also indicate that its impact depends largely on how teachers negotiate its pedagogical, ethical, and relational implications.

In the Artificial Intelligence era, the role of teachers is therefore fundamentally shifting—from sole knowledge providers to facilitators of critical thinking, ethical reasoning, and value formation [19]. Researchers argue that teachers must now guide learners in understanding algorithmic bias, navigating digital citizenship, and discerning credible information, skills essential in a technologically saturated society [20]. This redefined role demands heightened moral awareness, as teachers must balance the affordances of Artificial Intelligence with the responsibility to protect students' autonomy, privacy, and socio-emotional development. Such responsibilities are especially pronounced in Social Studies, where instruction inherently involves debates on ethics, democracy, culture, and civic identity.

Notably, existing research remains concentrated in technologically advanced or urban settings, often neglecting rural and resource-constrained communities where infrastructure and digital literacy vary significantly [21] [22]. Moreover, attention has been disproportionately given to STEM education, with limited examination of Artificial Intelligence's influence on Social Studies—a field where ethical reasoning, cultural understanding, and civic engagement are central. These gaps are particularly significant for Social Studies teachers, whose work involves cultivating democratic values and critical citizenship.

These research gaps are particularly concerning given that Social Studies teachers carry heightened ethical and civic responsibilities. Yet few studies explore how Artificial Intelligence influences their ability to cultivate critical citizenship, promote cultural understanding, and uphold moral education—areas that risk being compromised when instructional processes become increasingly automated. This study therefore positions Social Studies teachers as a crucial but understudied group whose perspectives can illuminate how Artificial Intelligence affects not only academic instruction but also social and ethical dimensions of learning.

To address these gaps, the present study investigates how Araling Panlipunan (Social Studies) teachers in public secondary schools in Matalam, Cotabato, perceive and experience Artificial Intelligence integration. A phenomenological approach was employed to explore teachers' lived experiences, emphasizing contextual, cultural, and ethical dimensions of Artificial Intelligence use. By centering teacher perspectives, the study provides localized insight into Artificial Intelligence adoption in rural Philippine settings and highlights the need for policies and professional development that support human-centered, context-responsive Artificial Intelligence integration. Consistent with the arguments of the , the findings underscore that meaningful educational innovation requires positioning teachers not merely as implementers of Artificial Intelligence reforms but as active co-creators of equitable and ethically grounded digital futures [23].

2. RESEARCH METHOD

This study employed a qualitative phenomenological research design using Interpretative Phenomenological Analysis to explore the lived experiences and social perceptions of Araling Panlipunan (Social Studies) teachers regarding the integration of Artificial Intelligence in education. Interpretative Phenomenological Analysis was selected because it focuses on how individuals interpret and make meaning of complex social and professional phenomena, making it highly appropriate for examining teachers' evolving roles, ethical concerns, and value-laden judgments in an Artificial Intelligence-mediated educational environment. Phenomenology is particularly relevant in this context because Artificial Intelligence adoption affects not only instructional practices but also teachers' social identities, professional autonomy, and moral responsibilities—dimensions best understood through personal experience.

A total of 22 participants were recruited through purposive sampling [19]. From the sixteen public secondary schools in Matalam, five were selected via a lottery draw. Within each school, 50% of Araling Panlipunan teachers with prior exposure, use, or demonstrated familiarity with Artificial Intelligence tools were invited to participate, ensuring that all respondents had substantive experiential insights.

Data were collected through in-depth semi-structured interviews lasting 45–60 minutes each, conducted personally by the researcher at times convenient for the teachers. Prior to data collection, informed consent was obtained from school heads and participants, who were thoroughly briefed on confidentiality, voluntary participation, and their right to withdraw.

Data were analyzed using thematic analysis, one of the most commonly utilized approaches in qualitative research. Following Braun and Clarke's framework [24], the analysis involved: (1) familiarization with the data through repeated reading of transcripts, (2) generation of initial codes to capture significant statements, (3) identification and clustering of themes reflecting patterns across participants, (4) reviewing and refining themes for coherence and internal consistency, and (5) defining and naming final themes to represent the essence of teachers' experiences. Member checking, peer debriefing, and maintenance of an audit trail were implemented to enhance credibility, confirm accuracy, and ensure trustworthiness [25].

Ethical principles were strictly upheld. Identifying details were removed, and participants were treated with dignity, transparency, and respect. By foregrounding teachers' voices, this study seeks to inform school leaders and policymakers on how Artificial Intelligence integration can strengthen—not diminish—the relational, ethical, and pedagogical foundations of teaching.

3. RESULTS AND DISCUSSION

3.1. Experiences and Expectations on the Potential Effects of Artificial Intelligence in Teaching Practices

3.1.1. Efficient and Reliable Teaching Assistant

Most Araling Panlipunan teachers described Artificial Intelligence as an efficient and reliable support tool, particularly in lesson preparation. They emphasized that Artificial Intelligence assists in generating, organizing, and summarizing content, which is especially useful given the breadth and depth of Araling Panlipunan as a content-heavy subject. Teachers highlighted that time saved in preparing materials could be redirected toward refining pedagogical strategies and addressing students' individual needs. Except for Participant 8, all participants consistently reported that Artificial Intelligence contributed to making their planning tasks more manageable, with several pointing out that Artificial Intelligence helped them identify relevant themes, clarify concepts, and streamline instructional design. The dissenting view came from Participant 8, who expressed concerns about the accuracy and contextual appropriateness of Artificial Intelligence-generated material, suggesting the importance of critical teacher oversight in the integration of Artificial Intelligence into academic practice.

These findings imply that Artificial Intelligence has strong potential to function as a “teaching assistant” in the classroom, complementing teachers' expertise by reducing time spent on routine tasks. Also, a study supports this claim, noting that Artificial Intelligence streamlines repetitive and time-consuming processes such as lesson planning, quiz generation, and content organization, thereby allowing teachers to focus on higher-order instructional activities [26]. Similarly, another finding argues that Artificial Intelligence should not replace but rather augment teachers' professional judgment, reinforcing the view expressed by participants that educators must critically evaluate Artificial Intelligence-generated outputs to maintain historical accuracy and contextual relevance in Araling Panlipunan instruction [27].

Furthermore, these insights underscore the growing need for Artificial Intelligence literacy among teachers. As suggest, equipping teachers with skills to critically assess and responsibly apply Artificial Intelligence-generated content is essential to avoid the risks of misinformation and superficial learning [28]. In line with this, cautions against an uncritical embrace of technological solutions, reminding educators that teaching is not only about efficiency but also about nurturing critical thinking, values, and contextual understanding [29].

Participants Excerpts:

Participant 3: *“Nakakatulong talaga ito si AI.”*

Participant 8: *“Hindi talaga siya accurate... hindi siya masyadong nakakonekt.”*

3.1.2. Text Generation AI as a Tool for Test, Activity, and Lesson Plan Construction

Teachers in the study consistently identified text generation Artificial Intelligence tools—particularly platforms such as ChatGPT—as the most valuable Artificial Intelligence applications for preparing instructional materials, including lesson plans, tests, and classroom activities. They emphasized the efficiency of these tools, noting their ability to generate structured content rapidly, a feature especially beneficial when teachers face tight schedules and heavy workloads. Participants also underscored that Artificial Intelligence aids in diversifying instructional strategies by providing alternative ideas, prompts, and activity designs that they may not have otherwise considered. For instance, Participant 5 highlighted combining multiple text-based technologies to strengthen instructional quality.

However, while text generation Artificial Intelligence was widely appreciated, participants expressed hesitancy toward more advanced Artificial Intelligence features, such as image and video generation. Barriers such as limited technical access, high costs, and unstable internet connectivity rendered these tools less practical in the Philippine classroom context. This divide reflects broader digital inequities in education, where accessibility to advanced tools remains uneven across different regions and schools.

The findings imply that text generation Artificial Intelligence is becoming indispensable in lesson preparation, supporting teachers in both efficiency and creativity. So, a study finding affirms that Artificial Intelligence can significantly reduce preparation time while enhancing the quality of content [30], a point echoed in another study which highlights Artificial Intelligence’s potential to streamline administrative and instructional tasks [31]. Yet, effective integration requires that teachers remain critical users, ensuring that Artificial Intelligence-generated outputs are contextually relevant, culturally sensitive, and pedagogically sound. The findings underscore that Artificial Intelligence is best positioned as an enhancement to teacher expertise rather than a replacement, thereby reinforcing the essential role of human oversight in adapting Artificial Intelligence-generated outputs to the distinct pedagogical demands of subjects such as Araling Panlipunan [32].

Participant Excerpts:

Participant 7 & 8: *“Gawan mo ako ng lesson plan... gawan mo ako ng activity, parang ganoon so text generation.”*

Participant 9: *“Nakakadagdag siya ng ideya kung ano yung mga mas maganda pa natin idagdag.”*

Participant 10: *“Isang type mo, then isang click, doon na.”*

Participant 5: *“Aware ka din doon sa different types of ganung AI para sa plagiarism... dapat aware ka talaga na teacher.”*

3.1.3. Technical Performance Issues

While teachers acknowledged the usefulness of Artificial Intelligence in lesson preparation, several participants reported persistent technical challenges when attempting to use image and video generation tools. Slow processing times, long download delays, and restrictive paywalls were frequently cited as barriers that prevented them from fully exploring these advanced features. Such technical limitations discouraged teachers from integrating multimedia-based Artificial Intelligence into their instruction, pushing them to rely more heavily on text generation tools, which are faster, more reliable, and widely accessible.

These results parallel the observations of scholars who note that performance limitations and embedded monetization features frequently diminish the practical usefulness of Artificial Intelligence tools in educational environments [33]. In resource-constrained contexts such as the Philippines, these barriers are particularly pronounced, as unreliable internet connectivity and limited institutional budgets compound the problem [34]. Teachers consequently adopt a pragmatic approach, gravitating toward Artificial Intelligence tools that guarantee immediate usability without excessive technical or financial demands.

Interestingly, participants’ experiences reflect a broader issue of digital inequality in education, where the potential of Artificial Intelligence-enhanced multimedia learning remains underutilized. Although image and video generation tools could enrich instruction—especially in visually demanding subjects—teachers’ limited access and time constraints keep them from experimenting with these innovations. This suggests that, without adequate infrastructural support, Artificial Intelligence integration may inadvertently widen gaps in educational quality across schools.

Participant Excerpts:

Participant 4: *“Yung mga videos... minsan talagang mahirap siya i-download.”*

Participant 10: *“Video or image generation kagaya ng Canva... may bayad din siya and matagal kungma-generate.”*

3.1.4. Content Specificity and Accuracy Issue

While text generation Artificial Intelligence is widely regarded as helpful in lesson planning, teachers reported that it requires carefully structured prompts to produce accurate and relevant outputs. Vague or overly broad instructions often resulted in content that was misaligned with intended learning objectives, forcing teachers to spend additional time revising or reworking Artificial Intelligence -generated material. This limitation not only delayed lesson preparation but also emphasized the necessity of teacher oversight in ensuring contextual and curricular alignment.

The findings also revealed that prompt formulation is emerging as a vital professional skill. Teachers are expected to act as mediators between Artificial Intelligence outputs and classroom realities, critically refining and adapting generated content to suit student needs. This evolving responsibility highlights a broader shift in teacher roles—from being sole content creators to functioning as evaluators, editors, and contextualizers of Artificial Intelligence -generated material. To maximize Artificial Intelligence’s benefits, there is a clear need for training that builds teachers’ confidence and competence in designing precise prompts and critically assessing the outputs.

These insights underscore that while Artificial Intelligence can streamline instructional preparation, it cannot fully replace the pedagogical expertise of teachers. As finding stresses that Artificial Intelligence should function as an augmentation of teacher expertise rather than a substitute, reinforcing the need for human oversight in adapting outputs to the unique demands of subjects like Araling Panlipunan [35]. These results align with scholars who maintain that Artificial Intelligence is most effective when used to enhance—rather than replace—teacher expertise, underscoring the critical role of human judgment in refining Artificial Intelligence outputs to meet the nuanced and contextual requirements of subjects such as Araling Panlipunan [36]. These results reflect the observations of researchers who note that issues such as system inefficiencies and commercial-driven design can limit the practical classroom utility of many Artificial Intelligence tools, reinforcing the participants’ concerns regarding reliability and contextual appropriateness [37].

Participant Excerpts:

Participant 3: *“Sa text generation kasi sometimes you need to use words na specific para ma-gets ng AI tool.”*

Participant 9: *“Kailangan specific yung iresearch mo... kapag broad, minsan bigyan ka ng ideya na masyadong malayo.”*

3.1.5. Role of Artificial Intelligence in Suggesting Teaching Methods

Teachers acknowledged that Artificial Intelligence contributes significantly to instructional design by recommending diverse, situation-specific teaching strategies. Drawing from its wide access to information, Artificial Intelligence can generate learner-centered and context-appropriate methods that align with both teacher preferences and student needs. Participants emphasized that this function allows them to save time, refine their approaches, and integrate strategies they might not have otherwise considered.

These findings highlight Artificial Intelligence’s potential as a reliable instructional assistant. By providing practical, tailored recommendations, Artificial Intelligence helps streamline lesson planning and promotes innovation in teaching. However, the results also suggest that teachers must exercise discernment, ensuring that Artificial Intelligence -suggested methods are not only pedagogically sound but also culturally relevant and aligned with curriculum standards. This reinforces the evolving role of educators as evaluators and decision-makers in integrating technology into classroom practice.

Such insights are consistent with broader literature. These findings further align with the argument that strengthening teachers’ Artificial Intelligence literacy enhances their professional agency, ensuring that technology functions as a support to—rather than a replacement for—effective teaching practice [38]. Likewise, the findings align with the view that Artificial Intelligence demonstrates notable adaptability in enhancing and refining teaching practices, as emphasized by [39]. While highlighting AI’s capacity to suggest contextually precise instructional strategies, these studies collectively affirm that the technology’s true value lies in complementing teacher expertise, thereby promoting both efficiency and creativity in educational practice [40].

Participant Excerpts:

Participant 1: *“Makahelp siya through suggesting different methods na pwede gamitin and strategies.”*

Participant 7: *“Daghan siya ihatag na mga ano... makuan nako na diri ko fit, daghan choices ba.”*

Participant 7 (continued): *“Makatabang siya in a way na ma-specify niya ang teaching methods... ma-specify gid niya.”*

3.1.6. Quick Provider of Teaching Strategies or Methods for Teachers

Teachers recognized Artificial Intelligence as a fast and reliable assistant for generating teaching strategies and methods, enabling them to access practical, tailored solutions without spending excessive time on planning. Participants highlighted Artificial Intelligence's efficiency in providing precise recommendations aligned with both teacher abilities and student needs, streamlining lesson preparation. They also noted its potential to reduce research time, generate organized lesson plans, and offer creative approaches that help sustain student attention and classroom participation.

The findings imply that Artificial Intelligence functions as an invaluable teaching partner by offering instant, diverse, and innovative strategies that allow educators to devote more energy to meaningful student engagement rather than administrative burdens. At the same time, teachers emphasized the importance of exercising professional judgment, as Artificial Intelligence-generated outputs require critical evaluation to ensure accuracy, cultural relevance, and curricular alignment.

These insights are consistent with recent scholarship. The study emphasizes that Artificial Intelligence should not replace teachers; rather, it should function as a supportive tool that reduces workload while enhancing instructional creativity [41]. Similarly, the study highlights Artificial Intelligence's role in improving teacher efficiency, while also emphasizing its contribution to the development of learner-centered instructional content [42]. Collectively, these studies affirm Artificial Intelligence's value as a quick yet context-sensitive provider of teaching strategies.

Participant Excerpts:

Participant 1: *"You just need to type the question and AI can answer it immediately."*

Participant 9: *"Nakakatulong yun sa mga estudyante para makuha yung kanilang attention na makinig at mag-participate sa klase."*

Participant 4: *"Pwede ka niyang bigyan ng lesson plan... important details na ibigay niya ipasunod. So mas madali siya."*

3.1.7. Unfit in Identifying Learner Needs

While Artificial Intelligence is acknowledged as a useful assistant for suggesting diverse teaching methods, teachers stressed that it falls short in fully understanding the nuanced needs and emotions of learners. Participants 9 and 10 observed that although Artificial Intelligence can generate a wide range of strategies, it cannot independently identify specific learner needs. Participant 10 emphasized that Artificial Intelligence requires teachers to first assess their students and input relevant information before it can produce context-appropriate objectives or strategies.

This finding implies that Artificial Intelligence cannot replace teachers' critical role in diagnosing learner needs and addressing the emotional and developmental dimensions of education. Although Artificial Intelligence can support instructional design, its effectiveness relies heavily on the teacher's expertise in providing accurate prompts, interpreting outputs, and adapting them to fit learners' unique circumstances. In this sense, Artificial Intelligence reinforces the teacher's role as the central decision-maker who ensures that classroom practices remain responsive, empathetic, and meaningful [43].

As Artificial Intelligence-related studies confirm, algorithms can recommend strategies based on available data but lack the human sensitivity to recognize student diversity and socio-emotional contexts [44], [45]. Thus, while Artificial Intelligence streamlines content generation, teachers remain indispensable in ensuring educational approaches are learner-centered and holistic.

Participant Excerpt:

Participant 10: *"Hindi niya naibigay kung ano ang specific needs ng student. Me, as a teacher, kailangan kong ilagay doon kung dapat na matutunan ng student."*

3.1.8. Artificial Intelligence as a Tool for Mastery

Most participants recognized Artificial Intelligence as a valuable resource for mastering course content, particularly when curriculum updates or new concepts emerge. Teachers agreed that Artificial Intelligence provides quick access to vast information, serving as a guide for staying current and strengthening subject knowledge. All participants, except Participants 8 and 9, affirmed that Artificial Intelligence supports mastery effectively by making complex topics more accessible and organized. Participant 5, however, observed that since the K-12 curriculum has remained largely stable, mastery can still be maintained without frequent reliance on Artificial Intelligence tools.

Some teachers expressed caution, noting that Artificial Intelligence is not flawless and mastery requires accurate, complete, and context-specific information. Participants 8 and 9 emphasized that while AI can enhance learning, its occasional gaps or imprecisions mean that it should complement, not substitute, human expertise.

These findings imply that Artificial Intelligence contributes to professional growth by supporting content mastery, yet its effectiveness is maximized only when combined with teachers' critical evaluation and contextual

knowledge. Artificial Intelligence functions best as an aid rather than a replacement, underscoring the enduring importance of teacher judgment in ensuring accuracy and pedagogical relevance. As noted, Artificial Intelligence can enhance teachers' content knowledge; however, it must be applied responsibly, with educators exercising professional judgment to ensure reliability and meaningful integration [46], [47].

Participant Excerpts:

Participant 5: *“Pero in terms of the mastery, hindi naman nagbabago, the K-12 curriculum pa rin kasi ang gamit. So, the competencies as is lang siya.”*

“But in terms of mastery, it is not changing, we still use the K-12 curriculum. So, the competencies remain the same.”

Participant 8: *“Hindi siya ganun kasi makatulong siya pero parang may kulang parin diba. Kasi iba kung ema-master nimo dapat perfect, pero hindi siya masyado ang makatulong.”*

“It's helpful, but it still feels like something is missing, right? If you need to master something, it should be perfect, but AI isn't always that helpful.”

3.1.9. Enhanced Information Through Artificial Intelligence

Although many teachers reported confidence in their mastery of course content, they agreed that Artificial Intelligence significantly enhances their understanding by providing additional and up-to-date information. Participants emphasized that Artificial Intelligence enriches topics with supplementary inputs and helps align teaching with current developments. Participant 2 specifically highlighted Artificial Intelligence's role in adding relevant details that make lessons more comprehensive, while Participant 1 valued its ability to simultaneously suggest multiple teaching strategies. Teachers also appreciated Artificial Intelligence's efficiency in simplifying and accelerating research, reducing the time and effort traditionally required to gather instructional materials. However, Participant 6 cautioned against overreliance, stressing the importance of validating Artificial Intelligence outputs with other credible sources.

These findings imply that Artificial Intelligence functions best as a complementary research tool, enriching teachers' content knowledge and offering diverse instructional ideas. Nevertheless, teacher expertise and critical judgment remain essential to ensure accuracy, depth, and contextual relevance in instruction. As affirm, the study findings highlights that Artificial Intelligence can streamline research and enhance content knowledge, but it should be integrated alongside traditional academic practices and professional expertise to maximize its educational value [48], [49].

Participant Excerpts:

Participant 2: *“Nagabigay siya ng mga additional input ng topics o kung ano man yung gusto mong hanapin, siya yung naga-add.”*

Participant 1: *“Yes, in so many ways. Like, yung mga strategies, marami siyang ibibigay.”*

Participant 6: *“Sometimes it helps, but not necessarily focus on its answers alone... nandun lahat. It helps.”*

3.1.10. Artificial Intelligence as a Tool for Personalized Instruction

Teachers generally viewed Artificial Intelligence as a supportive tool in designing personalized instruction, acknowledging its ability to generate varied strategies and content tailored to input data. Participants highlighted that Artificial Intelligence assists in lesson planning by offering adaptable materials, but its effectiveness depends entirely on the clarity and specificity of teacher-provided prompts. As several noted, Artificial Intelligence lacks the capacity to independently recognize the nuanced needs, emotions, and contexts of individual learners. Thus, while Artificial Intelligence can facilitate differentiation, the teacher remains central in interpreting student needs, making instructional decisions, and adjusting methods in real time.

These findings imply that Artificial Intelligence has potential to enrich personalization in education, yet it functions best as a complementary resource under teacher guidance. Human judgment, empathy, and professional expertise remain indispensable in ensuring that instruction is not only individualized but also meaningful and contextually relevant.

This aligns with findings that Artificial Intelligence can enhance access to educational resources but cannot replace the contextual judgment and sensitivity provided by teachers [50], and with who emphasize that the human element is critical in adapting instruction to diverse student realities [51]. Ultimately, Artificial Intelligence is seen as an assistant—not a replacement—for teacher-led personalization.

Participant Excerpts:

Participant 8: *“Iba kasi ang mga estudyante, iba-iba naman yung mga ano nila. Teacher parin mag identify at ibigay lang ni AI kung ano ang na input mo.”*

Participant 10: *"Ikaw mismo sa teacher ang need na mag-identify kung ano talaga yung needs ng every student mo kung paano sila matututo."*

3.1.11. Artificial Intelligence as a Vast Repository of Knowledge

Participants consistently recognized Artificial Intelligence as a powerful tool with access to an expansive and diverse pool of knowledge, often exceeding the breadth of expertise available to individual educators. They highlighted Artificial Intelligence's capacity to instantly generate updated information, innovative strategies, and creative solutions that enrich instructional planning and provide valuable support in areas where teachers may feel less confident. Some participants even perceived Artificial Intelligence as potentially more creative, owing to its global, multidisciplinary knowledge base that allows for fresh perspectives on lesson design.

These findings imply that Artificial Intelligence can enhance teacher effectiveness by supplementing professional expertise with rapid, wide-ranging insights. However, its role is best understood as supportive rather than substitutive; human creativity, emotional intelligence, and contextual judgment remain irreplaceable in ensuring that instruction is meaningful and responsive to learners' needs. As emphasized, while Artificial Intelligence has the capacity to foster creative thinking and support innovative instructional practices, it inherently lacks the emotional intelligence and relational depth that human teachers provide, which are essential for effective learning [52]. Similarly, it is argued that while Artificial Intelligence enhances teaching efficiency and expands access to knowledge, it cannot substitute for the contextual understanding, ethical judgment, and interpersonal guidance provided by teachers [53], it cannot replace the passion, empathy, and authenticity that educators bring into the classroom.

Participant Excerpts:

Participant 1 *"Pwede, kasi may areas na di expert ang guro na kaya din ng Artificial Intelligence."*

Participant 2: *"Kasi parang masyado malawak yung ano kung sa tao pa yung kaalaman ng Artificial Intelligence compare sa atin. Parang ganun. Kaya that's why parang more creative siya sa atin."*

Participant 6: *"Not only in, naka-base ka lang dun sa Artificial Intelligence, kasi ang Artificial Intelligence is kwan lang, guide lang siya. Okay, but depende yun sa teacher, pano niya gawin mas creative yung kanyang ginagawa."*

3.1.12. The Value of Human Creativity and Innovation

While Artificial Intelligence provides efficiency through automation, rapid access to information, and streamlined processes, participants stressed that it cannot replicate the depth of human creativity, emotional intelligence, or contextual awareness. They emphasized that true educational innovation lies in the teacher's ability to design imaginative strategies, adapt lessons to diverse student needs, and foster meaningful learning experiences that extend beyond algorithmic suggestions. Most participants agreed that although Artificial Intelligence can recommend instructional approaches, genuine creativity emerges from teachers' intuition, professional expertise, and lived experience in the classroom.

These findings imply that the role of teachers remains indispensable, as Artificial Intelligence alone cannot generate the originality, empathy, and contextual nuance required for effective pedagogy. Teachers are not only implementers of strategies but also creators of learning experiences that inspire, motivate, and respond to the unique realities of students. Artificial Intelligence may assist, but it is the teacher's creativity and innovation that ultimately shape impactful learning.

As supported by another study, Artificial Intelligence lacks the originality and emotional depth inherent in human creativity, positioning it as a complementary tool rather than a substitute for teachers' creative authority [54]. Therefore, teachers must remain central to instructional design, ensuring that AI and other technologies serve to complement rather than dictate the educational process [55].

Participant Excerpts:

Participant 3: *"Pwede naman mag-create ng ano no, mas nakakaisip din naman si teacher... So mag-create siya ng kanyang sarili innovation si teacher."*

Participant 6: *"Not only in, naka-base ka lang dun sa Artificial Intelligence ... guide lang siya... depende yun sa teacher, pano niya gawin mas creative yung kanyang ginagawa."*

Participant 8: *"Mas creative pa rin tayo kung gagawa talaga tayo ng mga ways... palabasin yung mga imagination natin, marami tayo ma-create."*
ways—using our imagination, we can create a lot.)

Participant 10: *"Teachers pa rin ang magbibigay ng idea dun sa AI tool... kasi is, magbibigay lang sya ng information kung ano yung ibibigay mo."*

3.1.13. Artificial Intelligence as a Support for Personalized and Efficient Learning

Artificial Intelligence was consistently viewed by participants as a valuable support tool for simplifying content delivery and customizing teaching strategies to accommodate diverse learner needs. Teachers noted that AI can generate personalized activities and instructional approaches, making lesson preparation more efficient and responsive. However, they emphasized that its effectiveness depends heavily on the accuracy and specificity of the teacher's inputs. Without clear guidance, Artificial Intelligence risks producing outputs that are generic or misaligned with student needs. Moreover, participants underscored that Artificial Intelligence lacks the capacity to interpret learners' emotional and social dimensions, which are central to meaningful personalization.

These findings imply that while Artificial Intelligence enhances efficiency and supports differentiated instruction, it cannot substitute for the teacher's role in understanding students holistically. Teachers remain essential in contextualizing Artificial Intelligence outputs, ensuring that personalization extends beyond academic needs to include empathy, relationships, and social development.

These findings align with prior studies, which note that Artificial Intelligence can streamline tasks, enhance resource access, and support creativity while requiring human oversight [56]. As an assistive technology dependent on human input, Artificial Intelligence complements rather than substitutes teacher expertise, highlighting the need for professional development in Artificial Intelligence literacy to ensure responsible integration into instruction [57].

Participant Excerpt:

Participant 2: *"It can cater through kung ano yung naka-input sa kanya, yung sa Artificial Intelligence."*

3.1.14. The Importance of Human Connection in Education

Participants emphasized the irreplaceable role of human intuition and emotional intelligence in the learning process, especially in meeting students' social and emotional needs—domains where Artificial Intelligence remains inherently limited. While Artificial Intelligence can assist by offering strategies and resources based on teacher prompts, it cannot independently assess or respond to learners' emotional states. Teachers highlighted that they remain responsible for discerning students' individual needs, emotional capacities, and learning styles, ensuring instruction that is both personalized and empathetic.

These insights imply that effective education requires balance: while Artificial Intelligence can support efficiency and provide valuable content, overreliance on it—particularly by students—risks diminishing critical thinking and deeper human engagement. Thus, the teacher's role is not diminished but rather reasserted as central in fostering meaningful connections and holistic learning.

This perspective reinforces the view that Artificial Intelligence's strengths in data processing and automation should serve as a complement, rather than a replacement, to the uniquely human qualities of empathy, creativity, and relational understanding in education [58], [59].

Participant Excerpts:

Participant 5: *"With the help of the teacher in choosing, for example, the strategy or the material na kukunin mo sa Artificial Intelligence, dapat ikaw mismo kasi na teacher, alam mo kung ano yung emotional quotient noong studyante mo."*

Participant 8: *"Especially sa emotions, diba? Ang Artificial Intelligence wala naman yan sa emotion. Diba? Kailangan mo pa i input, so mas ano pa rin talaga yung tao kaysa sa mga Artificial Intelligence na mga uso ngayon."*

Participant 10: *"Nakakatulong sya, pero ang mga teachers pa rin ang mag-identify ng needs ng every student."*

Participant 6: *"Instead of thinking na nag-iisa, ginagamit yung utak nila, mas piniprefer nila na gumamit ng cellphone through the use of this Artificial Intelligence. So, nawawalan yung value ng pag gamit ng pag-iisip nila. Kasi yung computer na yung kwan, diba? Yung nag-iisip."*

3.1.15. Artificial Intelligence's Potential to Enhance Student Engagement

Participants acknowledged Artificial Intelligence as a powerful support in designing enjoyable and interactive learning activities that sustain students' attention. They emphasized that Artificial Intelligence's extensive knowledge base allows it to generate meaningful and engaging instructional tasks, enriched by access to global studies and diverse resources. Teachers noted that Artificial Intelligence is particularly effective in aligning with student interests, as today's learners are highly immersed in technology. By integrating high-tech and innovative approaches, Artificial Intelligence makes learning more appealing and resonates with the preferences of the digital generation.

These findings suggest that while Artificial Intelligence cannot replicate the emotional connection and creative spontaneity that teachers contribute, it plays a complementary role in fostering engagement and enhancing

motivation. Through interactive, updated, and learner-centered content, Artificial Intelligence strengthens the overall learning experience and supports student participation. This aligns with the perspective that AI enriches traditional pedagogy by stimulating student involvement and promoting motivation through dynamic, technology-driven approaches [60], [61], [62].

Participant Excerpts:

Participant 9: *“Oo, malawak ang resources ng Artificial Intelligence eh, buong mundo na mga studies yan, so alam nya ano yung gusto ng mga students.”*

Participant 8: *“ang mga bata is mahilig na ngayon sa high-tech, sa social media. Pero kung sa akin kasi mas... Siya, may makaluma ako. Hindi, siguro masyado. Pero sa mga bata ngayon, kasi ang focus nila is more on high-tech.”*

3.1.16. Artificial Intelligence as a Tool for Catering to Learner Needs

Findings reveal that participants view Artificial Intelligence as a valuable resource for addressing the diverse needs of learners, particularly by supporting differentiated instruction through data-driven and personalized strategies. Teachers noted that Artificial Intelligence can respond to learners' unique profiles, including their multiple intelligences, by analyzing input and generating context-appropriate instructional approaches. One participant specifically highlighted Artificial Intelligence's usefulness in aligning strategies with various intelligences, making it a practical aid when integrated effectively into instructional planning and research.

These findings imply that while Artificial Intelligence enhances responsiveness to learner diversity, its effectiveness depends largely on the teacher's capacity to interpret student needs and apply Artificial Intelligence-generated strategies within the classroom context. This underscores the importance of professional development that extends beyond technical training to emphasize pedagogical expertise—particularly in applying frameworks such as Gardner's theory of multiple intelligences to ensure instructional relevance. This aligns with the view that although Artificial Intelligence can suggest a wide range of strategies, it is ultimately the educator who ensures their meaningful and effective application in practice [63], [64].

Participant Excerpt:

Participant 1: *“Yes. Kasi sometimes, ‘yung strategy ibabase ‘yan sa multiple intelligences, and i-type mo man ‘yan if ever you're going to research. So, maki-cater niya. And si AI, I think, may knowledge siya. Andon na ‘yung data niya na for everybody, na mag-cater ng ganong needs ng bata.”*

3.1.17. Teachers' Discernment in the Use of Artificial Intelligence

A recurring insight from participants is that Artificial Intelligence's capacity to address learner needs is highly dependent on the quality and specificity of the input provided by teachers. While participants acknowledged Artificial Intelligence as a helpful tool in generating strategies and supporting instruction, they emphasized that teachers remain essential in identifying and interpreting learner needs. Several participants (2, 3, 4, and 5) underscored that Artificial Intelligence only functions based on the information it receives, reinforcing the view that Artificial Intelligence supports—but does not replace—the teacher's role in the learning process.

These findings imply that the effectiveness of Artificial Intelligence in education is contingent on the teacher's discernment in both guiding the input and evaluating the output. A collaborative relationship between teacher expertise and Artificial Intelligence assistance maximizes the strengths of both human insight and technological support. Thus, educators must be equipped not only with technical skills to navigate Artificial Intelligence tools but also with professional judgment to ensure that Artificial Intelligence-generated strategies are relevant, accurate, and aligned with learners' behaviors and needs. As emphasized, while Artificial Intelligence can generate strategies tailored to learner needs, it is ultimately the teacher's discernment and expertise that determine their meaningful and effective application in real classroom contexts [65], [66].

Participant Excerpts:

Participant 4: *“Kasi i-type ko na doon kung ano yung behavior ng bata. Magbigay sila kung ano yung pwede mong gawin.”*

Participant 3: *“Depende siguro sa pag-ano mo, pa-put up mo ng question. Kasi info, i-enter mo naman kung ano yung gusto mong ibigay ni Artificial Intelligence.”*

3.2. Social and Pedagogical Implications of Artificial Intelligence Integration

The integration of Artificial Intelligence in educational settings extends far beyond gains in instructional efficiency or learner personalization — it fundamentally reshapes the social role of teachers and the moral and value-based dimensions of education. Artificial Intelligence-mediated learning environments are not merely technological add-ons; they transform the context in which teacher–student interactions and value formation occur.

Artificial Intelligence systems, through automated feedback, adaptive assessments, and content generation, threaten to reduce opportunities for spontaneous dialogue, critical discussion, and relational engagement, which have long been central to socially constructed learning and moral development [67]. Research indicates that while Artificial Intelligence can streamline routine tasks, its use often correlates with reduced instructor presence and diminished interpersonal interaction, thereby weakening relational trust and social cohesion in online or AI-assisted classrooms [68], [69].

From a social constructivist perspective, effective learning emerges through collaborative meaning-making, social negotiation, and scaffolding within a social context [70]. If Artificial Intelligence becomes the primary conduit of information or assessment, the role of the teacher as mediator, mentor, and moral guide risks being diminished. This shift has significant implications for disciplines such as Social Studies, where teachers are tasked not only with delivering content but also with facilitating civic values, cultural identity, empathy, and critical citizenship. Moreover, as Artificial Intelligence-generated outputs become normalized in assignments and assessments, questions of ethical literacy, academic integrity, and algorithmic bias gain urgency. A recent ethical- Artificial Intelligence review argues that Artificial Intelligence in education may unintentionally perpetuate inequities, limit student autonomy, and undermine intellectual creativity if unregulated [71]. Indeed, algorithmic systems often embed biases present in training data, which may influence the cultural and civic perspectives students adopt — an especially risky prospect in socially formative subjects.

Empirical studies support these concerns: educators report anxiety about Artificial Intelligence eroding human connection, reducing opportunities for empathic engagement, and constraining moral reasoning to quantifiable outputs [72]. In one study, academic staff noted widespread ethical concerns over plagiarism and the loss of original thinking when students rely on natural language generation tools [73]. Another argued that Artificial Intelligence systems — when used without teacher mediation — risk transforming classrooms into transactional environments focused on efficiency rather than values, reducing education to data and output metrics rather than dialogical, reflective processes [74].

Consequently, the role of teachers must evolve from that of content deliverers to ethical mediators and facilitators of social knowledge integration. Artificial Intelligence should not be viewed simply as a tool, but rather as part of a new social context that demands digital ethical literacy, critical awareness, and deliberate pedagogical design. Curriculum planners and policymakers must therefore incorporate structures for ethical and civic education, digital responsibility, and teacher training that foreground human judgment, empathy, and social responsibility alongside Artificial Intelligence use. Without such measures, there is a real danger that the relational and moral foundations of education — especially in Social Studies — may erode under a tide of automated efficiency.

Table 1. Experiences and Expectations of Araling Panlipunan Teachers Regarding the Potential Effects of Artificial Intelligence on their Teaching Practices

Emerging Themes	Description/Implications	Core Ideas
Efficient and Reliable Teaching Assistant	Teachers recognize the capability of Artificial Intelligence to provide information quickly as they utilize Artificial Intelligence in their teaching practice.	Especially when the lesson is not mastered, especially in Araling Panlipunan, right? Social Studies, because social studies is more on- it's more on- history, right? It's history. Then, so it's really necessary. Artificial Intelligence really helps
Test, Activity and Lesson Plan Construction	Text Generation Artificial Intelligence such as CC and ChatGPT are used by teachers in the preparation for the delivery of instruction such as lesson planning.	It's like CC and the one you said earlier, ChatGPT, I used that too. Make me a lesson plan, like that. Make me an activity, it's like that so text generation
Technical Performance Issues	Teachers find video/image generation Artificial Intelligence to be difficult to navigate, requires longer time to process and some of the functions need payment.	Video generation or image generation such as Canva. So, it is difficult to navigate. Also it has a fee and it takes a long time to generate images or videos.
Role of Artificial Intelligence in Suggesting Teaching Methods	Artificial Intelligence can generate teaching strategies and methods that are based on the capabilities of the teacher ensuring these strategies to be effective.	It gives numerous teaching methods that are fit to my teaching and can provide wide range of strategies to choose from

Quick Provider of Teaching Strategies or Methods for Teachers	Teachers acknowledge Artificial Intelligence as a quick tool in choosing strategies and in lesson planning as it makes the preparation easier.	You just need to type the question and Artificial Intelligence can answer it immediately
Unfit in identifying Learner Needs	Artificial Intelligence cannot physically assess and observe the learners, because of this, it is hindered from understanding the deeper needs of the learners.	It cannot provide or understand the specific needs of the learners. For me, as a teacher needs to identify and put there what my students should learn
Artificial Intelligence as a tool for Mastery	Artificial Intelligence can improve the knowledge at hand, it can answer the questions of the user.	it can give additional input on the topics or what you wanted to find, it can add
Artificial Intelligence as a tool for Personalized Instruction	Artificial Intelligence is not capable of independently identifying diverse learner needs; however, it can provide information that supports addressing these needs based on the input provides by the teacher.	Students are different from each other, they have difference (in needs)... the teachers are still the ones responsible to identify (these needs) and Artificial Intelligence would only give you (information) based on your input.
Artificial Intelligence as a Vast Repository of Knowledge	Artificial Intelligence is capable of providing vast amounts of knowledge in various fields due to its access to extensive databanks. Compared to humans, Artificial Intelligence also demonstrates a notable capacity for creativity. It gives tons of information to the users.	Because it seems that the knowledge of Artificial Intelligence is very wide compared to use (humans). Somewhat like that. So that's why it seems to be more creative than us
The Value of Human Creativity and Innovation	While Artificial Intelligence can exhibit creativity, the human mind remains more creative, especially in terms of innovation as humans are able to adapt into different situations or challenges to still achieve the goal. Still, the teacher implies that it is the human mind that drives decision-making and creative direction, only Artificial Intelligence follows.	We are still more creative if we find more ways or just create different ways, because Artificial Intelligence can create based on what we instruct it to do, but we can brainstorm or create ideas, use our imagination we can really create (Teachers are still the ones who give ideas on the Artificial Intelligence tool because the Artificial Intelligence tool will only give information based on the topic you will give it.
The Importance of Human Connection in Education	Araling Panlipunan teachers emphasize the importance of human connection in education, particularly the teacher-learner relationship, because Artificial Intelligence cannot assess a learner's emotional needs.	Especially with emotions, right? Artificial Intelligence doesn't have that emotion. Right? You still need to input, so humans are really better than Artificial Intelligence that is widely used today.
Artificial Intelligence's Potential to Enhance Student Engagement	Artificial Intelligence has the potential to enhance student engagement by leveraging its awareness of current trends. By designing activities aligned with these trends, Artificial Intelligence can effectively capture learners' attention	Yes, the resources of Artificial Intelligence are vast, because these come from studies all over the world, so Artificial Intelligence knows what the students wants Students are now fond of high-tech, in social media. But I am somewhat old-fashioned, but not too much. But with kids today, because their focus is more on high-tech

Artificial Intelligence as a Tool for Catering to Learner Needs	Artificial Intelligence can support the diverse needs of learners, including multiple intelligences, based on the needs identified by the teacher as it can source its knowledge from extensive databanks.	Yes, strategies should be based on multiple-intelligences and you encode that in Artificial Intelligence if ever you are doing research. So, (these needs) will be catered by Artificial Intelligence based on the knowledge it has. The data is available for everybody to cater the needs of the students.
Teachers Discernment in the Use of Artificial Intelligence	Araling Panlipunan Teachers emphasized that it is still the teacher who provides the input that guides how Artificial Intelligence responds to and addresses those needs.	It depends on how you put up the question, what prompt you entered is what you want the Artificial Intelligence to provide

4. CONCLUSION

This phenomenological study explored the experiences and expectations of Araling Panlipunan teachers regarding the potential effects of Artificial Intelligence on their teaching practices. Findings revealed that teachers generally view Artificial Intelligence as a valuable instructional assistant, particularly in lesson preparation, content mastery, and the generation of teaching strategies. Text generation tools, such as ChatGPT, were regarded as the most practical and accessible, helping teachers streamline tasks and enhance efficiency under time constraints. Teachers appreciated Artificial Intelligence's capacity to enrich instruction through diverse strategies and updated information, while also acknowledging its potential to boost student engagement by providing interactive and technology-aligned activities.

However, participants also expressed important cautions. They highlighted limitations in Artificial Intelligence's ability to recognize learners' emotional and social needs, emphasizing that personalized instruction still relies on teacher discernment and contextual understanding. Concerns about technical performance, content specificity, and accuracy further reinforced the need for teacher oversight in using Artificial Intelligence responsibly. Teachers stressed that while Artificial Intelligence can suggest strategies and supplement knowledge, true creativity, innovation, and empathy remain uniquely human contributions. The role of educators, therefore, extends beyond technical adoption to guiding Artificial Intelligence's integration in ways that are meaningful, ethical, and pedagogically sound.

Overall, the experiences and expectations of Araling Panlipunan teachers position Artificial Intelligence as a supportive, not substitutive, tool. It is viewed as a partner in enhancing instructional efficiency and creativity while reaffirming the irreplaceable role of teachers in ensuring relevance, accuracy, and learner-centeredness. In the age of Artificial Intelligence, the evolving role of educators lies in balancing technological assistance with human expertise, ensuring that instruction remains both efficient and deeply connected to students' diverse needs.

ACKNOWLEDGEMENTS

The authors would like to thank the participants in this study. Their participation and insightful contributions were invaluable to the research. The authors also thank everyone who supported this research, making its successful completion possible.

REFERENCES

- [1] A. Bhatia, P. Bhatia, and D. Sood, "Leveraging AI to transform online higher education: Focusing on personalized learning, assessment, and student engagement," *International Journal of Management and Humanities (IJMH) Volume-11 Issue-1*, 2024.
- [2] R. Sajja, Y. Sermet, D. Cwiertny, and I. Demir, "Integrating AI and learning analytics for data-driven pedagogical decisions and personalized interventions in education," *Technology, knowledge and learning*, pp. 1–31, 2025.
- [3] M. A. Beirat, D. M. Tashtoush, M. A. Khasawneh, E. A. Az-Zo'bi, and M. A. Tashtoush, "The effect of artificial intelligence on enhancing education quality and reduce the levels of future anxiety among Jordanian teachers," *Appl. Math*, vol. 19, no. 2, pp. 279–290, 2025.
- [4] A. Mehdaoui, "Unveiling Barriers and Challenges of AI Technology Integration in Education: Assessing Teachers' Perceptions, Readiness and Anticipated Resistance," *Futurity Education*, vol. 4, no. 4, pp. 95–108, 2024.
- [5] I. M. Rassolov, N. V. Sidiyacheva, L. E. Zotova, F. S. Salitova, S. M. Konyushenko, and N. K. Gzhenskaya, "Socio-Pedagogical Priorities of the Educational Process at the University: The Didactic Aspect of Information Technology.," *International Journal of Environmental and Science Education*, vol. 11, no. 18, pp. 10987–10997, 2016.
- [6] O. O. Ayeni, N. M. Al Hamad, O. N. Chisom, B. Osawaru, and O. E. Adewusi, "AI in education: A review of personalized learning and educational technology," *GSC Advanced Research and Reviews*, vol. 18, no. 2, pp. 261–271, 2024.

- [7] T. Rasheed, A. Bashir, S. Hanif, and H. Gul, "Leveraging AI to mitigate educational inequality: Personalized learning resources, accessibility, and student outcomes," *The Critical Review of Social Sciences Studies*, vol. 3, no. 1, pp. 2399–2412, 2025.
- [8] I.-A. Chounta, E. Bardone, A. Raudsep, and M. Pedaste, "Exploring teachers' perceptions of artificial intelligence as a tool to support their practice in Estonian K-12 education," *Int J Artif Intell Educ*, vol. 32, no. 3, pp. 725–755, 2022.
- [9] Q. Wang, I. Camacho, S. Jing, and A. K. Goel, "Understanding the design space of AI-mediated social interaction in online learning: challenges and opportunities," *Proc ACM Hum Comput Interact*, vol. 6, no. CSCW1, pp. 1–26, 2022.
- [10] J. Solyst, E. Yang, S. Xie, A. Ogan, J. Hammer, and M. Eslami, "The potential of diverse youth as stakeholders in identifying and mitigating algorithmic bias for a future of fairer AI," *Proc ACM Hum Comput Interact*, vol. 7, no. CSCW2, pp. 1–27, 2023.
- [11] A. A. Adewojo, "Beyond the Physical: Exploring the Ontological Implications of Future Classrooms in Digital and AI-Mediated Spaces," *Digital Education Review*, vol. 46, pp. 1–12, 2025.
- [12] K. N. Gulson, S. Sellar, and P. T. Webb, *Algorithms of education: How datafication and artificial intelligence shape policy*. U of Minnesota Press, 2022.
- [13] Y. Register, *The Future of AI Can Be Kind: Strategies for Embedded Ethics in AI Education*. University of Washington, 2024.
- [14] N. Ettlinger, "The datafication of knowledge production and consequences for the pursuit of social justice," in *Knowledge and digital technology*, Springer Nature Switzerland Cham, 2024, pp. 79–104.
- [15] J. Bareis and C. Katzenbach, "Talking AI into being: The narratives and imaginaries of national AI strategies and their performative politics," *Sci Technol Human Values*, vol. 47, no. 5, pp. 855–881, 2022.
- [16] E. K. Gyekye, "ChatGPT as a Metacognitive Catalyst in Personalized Learning Ecosystems," 2025.
- [17] R. Daher, "Integrating AI literacy into teacher education: a critical perspective paper," *Discover Artificial Intelligence*, vol. 5, no. 1, p. 217, 2025.
- [18] F. Ahmed, "The digital divide and AI in education: Addressing equity and accessibility," *AI EDIFY Journal*, vol. 1, no. 2, pp. 12–23, 2024.
- [19] A. S. George, "Preparing students for an AI-driven world: Rethinking curriculum and pedagogy in the age of artificial intelligence," *Partners Universal Innovative Research Publication*, vol. 1, no. 2, pp. 112–136, 2023.
- [20] G. Y. Yingsoon, N. A. Chua, Z. Suyan, C. Yiming, Z. Haiyan, and T. Xiaoyao, "Empowering Digital Citizens: Navigating AI Ethics, Engagement, and Privacy in the Era of Advanced Education," in *Digital Citizenship and the Future of AI Engagement, Ethics, and Privacy*, IGI Global Scientific Publishing, 2025, pp. 79–110.
- [21] R. Sharma, A.-R. Fantin, N. Prabhu, C. Guan, and A. Dattakumar, "Digital literacy and knowledge societies: A grounded theory investigation of sustainable development," *Telecomm Policy*, vol. 40, no. 7, pp. 628–643, 2016.
- [22] I. Finefer-Rosenbluh, "Behind the scenes of reflective practice in professional development: A glance into the ethical predicaments of secondary school teachers," *Teach Teach Educ*, vol. 60, pp. 1–11, 2016.
- [23] A. Harris, M. Jones, and J. Huffman, "Teachers leading educational reform," *Teachers Leading Educational Reform: The Power of Professional Learning Communities*. Routledge. <https://doi.org/10.4324/9781315630724>, 2017.
- [24] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qual Res Psychol*, vol. 3, no. 2, pp. 77–101, 2006.
- [25] M. Carcary, "The research audit trial—enhancing trustworthiness in qualitative inquiry," *Electronic journal of business research methods*, vol. 7, no. 1, pp. pp11-24, 2009.
- [26] I. R. Berson and M. J. Berson, "AI in K-12 social studies education: A critical examination of ethical and practical challenges," in *International conference on artificial intelligence in education*, Springer, 2024, pp. 101–112.
- [27] R. A. Jacob, "Role of AI in transforming Teacher and Student Workflows in Classroom Settings".
- [28] H. Elsayed, "The impact of hallucinated information in large language models on student learning outcomes: A critical examination of misinformation risks in AI-assisted education," *Northern Reviews on Algorithmic Research, Theoretical Computation, and Complexity*, vol. 9, no. 8, pp. 11–23, 2024.
- [29] M. D. Lytras, P. Ordóñez de Pablos, and T. Aldosemani, *Fostering teacher skills and critical thinking in modern education*. IGI Global, 2024.
- [30] M. A. Beirat, D. M. Tashtoush, M. A. Khasawneh, E. A. Az-Zo'bi, and M. A. Tashtoush, "The effect of artificial intelligence on enhancing education quality and reduce the levels of future anxiety among Jordanian teachers," *Appl. Math*, vol. 19, no. 2, pp. 279–290, 2025.
- [31] J. Rajini, K. Kalaivani, L. Singh, S. Elavarasan, and S. Roy, "Streamlining Administrative Tasks to Boost Teacher Productivity Using AI-Driven Solutions," in *Digital Leadership for Sustainable Higher Education*, IGI Global Scientific Publishing, 2025, pp. 191–218.
- [32] F. Pedro, M. Subosa, A. Rivas, and P. Valverde, "Artificial intelligence in education: Challenges and opportunities for sustainable development," 2019.
- [33] X. Han, S. Xiao, J. Sheng, and G. Zhang, "Enhancing efficiency and decision-making in higher education through intelligent commercial integration: Leveraging artificial intelligence," *Journal of the Knowledge Economy*, vol. 16, no. 1, pp. 1546–1582, 2025.
- [34] M. J. Delos Reyes-Urmanita and F. Moreno, "An Analytical Examination of the Preparedness and Challenges in the Implementation of E-Governance for the Optimization of Public Service Delivery in Zamboanga City, Philippines," 2024.
- [35] N. Selwyn, *Should robots replace teachers?: AI and the future of education*. John Wiley & Sons, 2019.
- [36] A. Holzinger, K. Zatloukal, and H. Müller, "Is human oversight to AI systems still possible?," 2025, *Elsevier*.
- [37] T. Nazaretsky, M. Ariely, M. Cukurova, and G. Alexandron, "Teachers' trust in AI-powered educational technology and a professional development program to improve it," *British journal of educational technology*, vol. 53, no. 4, pp. 914–931, 2022.

- [38] N. Al Harrasi, N. Al Subhi, S. Al Harthy, and J. Al Habsi, "Learner perspectives on AI teacher effectiveness: The role of engagement, motivation, efficiency, and educational experience," *Social Sciences & Humanities Open*, vol. 12, p. 101950, 2025.
- [39] F. Karataş, B. Eriçok, and L. Tanrikulu, "Reshaping curriculum adaptation in the age of artificial intelligence: Mapping teachers' AI-driven curriculum adaptation patterns," *Br Educ Res J*, vol. 51, no. 1, pp. 154–180, 2025.
- [40] H. Jung, "AI-Assisted Student-Generated Listening Materials in High School EFL: A Sociomaterial Perspective," *Multimedia-Assisted Language Learning*, vol. 28, no. 2, pp. 55–76, 2025.
- [41] R. Hashem, N. Ali, F. El Zein, P. Fidalgo, and O. A. Khurma, "AI to the rescue: Exploring the potential of ChatGPT as a teacher ally for workload relief and burnout prevention.," *Res Pract Technol Enhanc Learn*, vol. 19, 2024.
- [42] O. O. Oyelana, J. Olson, and V. Caine, "An evolutionary concept analysis of learner-centered teaching," *Nurse Educ Today*, vol. 108, p. 105187, 2022.
- [43] N. Karakuş, K. Gedik, and S. Kazazoğlu, "Ethical Decision-Making in Education: A Comparative Study of Teachers and Artificial Intelligence in Ethical Dilemmas," *Behavioral Sciences*, vol. 15, no. 4, p. 469, 2025.
- [44] A. O. R. Vistorte, A. Deroncele-Acosta, J. L. M. Ayala, A. Barrasa, C. López-Granero, and M. Martí-González, "Integrating artificial intelligence to assess emotions in learning environments: a systematic literature review," *Front Psychol*, vol. 15, p. 1387089, 2024.
- [45] X. Chen, H. Xie, S. J. Qin, F. L. Wang, and Y. Hou, "Artificial Intelligence-Supported Student Engagement Research: Text Mining and Systematic Analysis," *Eur J Educ*, vol. 60, no. 1, p. e70008, 2025.
- [46] F. Pedro, M. Subosa, A. Rivas, and P. Valverde, "Artificial intelligence in education: Challenges and opportunities for sustainable development," 2019.
- [47] D. S. Yadav, "Navigating the landscape of AI integration in education: opportunities, challenges, and ethical considerations for harnessing the potential of artificial intelligence (AI) for teaching and learning," *BSSS Journal of Computer*, vol. 15, no. 1, pp. 38–48, 2024.
- [48] X. Han, S. Xiao, J. Sheng, and G. Zhang, "Enhancing efficiency and decision-making in higher education through intelligent commercial integration: Leveraging artificial intelligence," *Journal of the Knowledge Economy*, vol. 16, no. 1, pp. 1546–1582, 2025.
- [49] F. Pedro, M. Subosa, A. Rivas, and P. Valverde, "Artificial intelligence in education: Challenges and opportunities for sustainable development," 2019.
- [50] F. Pedro, M. Subosa, A. Rivas, and P. Valverde, "Artificial intelligence in education: Challenges and opportunities for sustainable development," 2019.
- [51] S. Sharma, "Enhancing Inclusive Learning Environments: Strategies for Curriculum Adaptation and Modification," *Future of Special Education in India*, vol. 109, 2024.
- [52] H. Lin and Q. Chen, "Artificial intelligence (AI)-integrated educational applications and college students' creativity and academic emotions: students and teachers' perceptions and attitudes," *BMC Psychol*, vol. 12, no. 1, p. 487, 2024.
- [53] M. Lettieri, "Embracing Empathy: How AI Technologies Enhance the Pedagogy of Kindness in Education," in *Redefining Education With Pandemic Pedagogies*, IGI Global, 2025, pp. 167–186.
- [54] E. N. S. Lockhart, "Creativity in the age of AI: The human condition and the limits of machine generation," *J Cult Cogn Sci*, vol. 9, no. 1, pp. 83–88, 2025.
- [55] L. B. Nilson and L. A. Goodson, *Online teaching at its best: Merging instructional design with teaching and learning research*. John Wiley & Sons, 2021.
- [56] D. Giansanti and A. Pirrera, "Integrating AI and assistive technologies in healthcare: Insights from a narrative review of reviews," in *Healthcare*, MDPI, 2025, p. 556.
- [57] M. Marienko, Y. Nosenko, A. Sukhikh, V. Tataurov, and M. Shyshkina, "Personalization of learning through adaptive technologies in the context of sustainable development of teachers education," *arXiv preprint arXiv:2006.05810*, 2020.
- [58] A. Aulia, A. A. Ardelia, D. Triani, V. Anabella, G. A. N. Saranga, and R. Juwita, "Can AI Surpass Human Capabilities in Education? Exploring the Limits and Possibilities," in *World Conference on Governance and Social Sciences*, 2024, pp. 74–81.
- [59] J. E. Aoun, *Robot-proof: higher education in the age of artificial intelligence*. MIT press, 2017.
- [60] S. Yadav, "Leveraging AI to enhance teaching and learning in education: The role of artificial intelligence in modernizing classroom practices," in *Optimizing research techniques and learning strategies with digital technologies*, IGI Global Scientific Publishing, 2025, pp. 211–238.
- [61] A. A. Alsaedi, "Ai-Powered Pedagogy: Revolutionizing Students'learning Experiences Through Integration of AI Technologies," 2024.
- [62] Z. E. Ahmed, A. A. Hassan, and R. A. Saeed, *AI-Enhanced Teaching Methods*. IGI Global, 2024.
- [63] D. Schiff, "Education for AI, not AI for education: The role of education and ethics in national AI policy strategies," *Int J Artif Intell Educ*, vol. 32, no. 3, pp. 527–563, 2022.
- [64] F. Pedro, M. Subosa, A. Rivas, and P. Valverde, "Artificial intelligence in education: Challenges and opportunities for sustainable development," 2019.
- [65] D. Zou, H. Xie, and L. Kohnke, "Navigating the Future: Establishing a Framework for Educators' Pedagogic Artificial Intelligence Competence," *Eur J Educ*, vol. 60, no. 2, p. e70117, 2025.
- [66] M. A. Almuhanha, "Teachers' perspectives of integrating AI-powered technologies in K-12 education for creating customized learning materials and resources," *Educ Inf Technol (Dordr)*, vol. 30, no. 8, pp. 10343–10371, 2025.
- [67] R. Romano, "Ethical Issues on artificial intelligence and human relationships," in *INTED2024 Proceedings*, IATED, 2024, pp. 6902–6909.
- [68] J. Kim, K. Merrill Jr, K. Xu, and D. D. Sellnow, "I like my relational machine teacher: An AI instructor's communication styles and social presence in online education," *Int J Hum Comput Interact*, vol. 37, no. 18, pp. 1760–1770, 2021.

- [69] P. Yoon and J. Leem, "The influence of social presence in online classes using virtual conferencing: Relationships between group cohesion, group efficacy, and academic performance," *Sustainability*, vol. 13, no. 4, p. 1988, 2021.
- [70] Y. E. Rachmad, "Social Constructivism Theory," *United Nations Economic and Social Council*, 2025.
- [71] Z. Revesai, "Ethical Implications of AI-Driven Education Systems on Digital Rights: A Comparative Analysis," *The Fountain: Journal of Interdisciplinary Studies*, vol. 8, no. 1, pp. 126–152, 2024.
- [72] R. Romano, "Ethical Issues on artificial intelligence and human relationships," in *INTED2024 Proceedings*, IATED, 2024, pp. 6902–6909.
- [73] R. Mulenga and H. Shilongo, "Academic integrity in higher education: Understanding and addressing plagiarism," *Acta Pedagogica Asiana*, vol. 3, no. 1, pp. 30–43, 2024.
- [74] R. Alfaisal, S. A. Salloum, and A. Salloum, "Transforming Teacher-Student Interactions in the Metaverse: The Role of ChatGPT as a Mediator and Facilitator," in *Artificial Intelligence in Education: The Power and Dangers of ChatGPT in the Classroom*, Springer, 2024, pp. 403–412.