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Preservice Teacher Autonomy in the Instructional Use of Artificial Intelligence

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Abstract
Teacher autonomy is important for teachers to practice, as it provides them with an avenue to emphasize and implement their own approaches during classroom instruction. While there are studies contextualizing its importance, fewer focus on preservice teachers' perspectives on their autonomy, especially in the instructional use of artificial intelligence (AI). This study used an explanatory sequential mixed-method research design to assess the preservice teachers' autonomy in the instructional use of artificial intelligence. A total of 52 preservice teachers across different teacher education degree programs participated in answering the survey questions, while 17 responded to open-ended questions for the qualitative component. The findings revealed that preservice teachers displayed both high general and curriculum autonomy in the instructional use of AI. Moreover, although preservice teachers are directly exposed to AI, their responses indicate that they primarily view it as a support tool that provides ideas and content, which they integrate into their instruction with caution. This suggests that while preservice teachers value AI in their instruction, they hold the authority to determine how and when to apply it, clearly affirming that teacher autonomy remains primary and AI dependence remains secondary.

Keywords: Teacher Autonomy, General Autonomy, Curriculum Autonomy, Instructional Artificial Intelligence, Preservice Teacher

1. The Problem and its Setting

Rationale

Artificial Intelligence (AI) has been crawling its way into the education landscape on a rapid scale. It is found to contribute in bettering the workload and stress, and enhancing teacher's instructional capacity to incorporate it in their instructional delivery for effective teaching (Duan & Zhao, 2024) [17]. But, the concern comes when instructional AI-integration affects teachers autonomy in instructional delivery. Teachers Autonomy (TA) in the classroom is influenced by a wide range of factors, such as contextual and organizational factors (Elo & Nygren-Landgärd, 2022; Prichard & Moore, 2016) [18, 54], this includes the perception of teachers on their intention to use AI, with the influence of their working environment and professional training opportunities for AI-based teaching (Limna, X., *et al*., 2025) [41]. While some teachers feel supported by AI tools that reduce workload, others express concern over diminished pedagogical control and autonomy, especially when AI is implemented in rigid, top-down systems (Tripathi, Farswan, Basera, & Tiwari, 2025) [63].

In addition, studies show that teacher autonomy helps reduce stress and burnout by enhancing psychological well-being. To emphasize, when teachers are given meaningful choices and clear, non-pressuring explanations for professional tasks, autonomy is supported more effectively than simply leaving them to work alone (Reeve & Cheon, 2021; Power & Goodnough, 2018). On the other hand, it is also found that there is a constraint between teacher autonomy and school or government policies, such as standardized testing and scripted curricula. Hence, maintaining a balance is crucial so that teachers are treated as professional decision-makers rather than mere followers and implementers of these policies (Jerrim, Morgan, & Sims, 2023; Power & Goodnough, 2018).

In Asia, studies have shown a sharp increase in research publications on AI in K-12 education in the region over the past decade, with the majority of studies published in only the last few years, indicating rapid and widespread academic interest in AI education applications (Kong & Cheng, 2025) [40]. Despite extensive research on the general impact of AI in education,

there is limited attention on how pre-service and student teachers perceive and exercise autonomy in the classroom, particularly regarding their instructional decisions when integrating AI (Khotima, Basthomi, & Eliyana, 2023). Teacher autonomy is a fundamental capacity that enables informed instructional decision-making independent of external mandates. Consequently, a study based in Indonesia found that teacher education programs are essential in fostering this independence through reflective practice and pedagogical responsibility among pre-service teachers (Khotima, Basthomi, & Eliyana, 2023). Moreover, a study in Thailand found that teachers in Thai public high schools perceived a high degree of teacher autonomy overall, indicating that teachers felt they had substantial freedom and capacity in their instructional decision-making (Swatevacharkul, 2024) [61].

In the Philippine context, it is found that teachers exhibited a very high level of autonomy, particularly in instructional planning and classroom management (Gargarita, 2025) [25]. These findings suggest that strengthening teacher autonomy promotes greater instructional innovation and professional accountability. Similarly, enhancing autonomy through supportive classroom observations, constructive feedback, shared decision-making, and conducive workplace conditions can significantly improve teacher morale, retention, and overall effectiveness (Camello & Mahistrado, 2025) [6]. These results highlight important implications for school leaders, policymakers, and professional development planners, who play a crucial role in fostering teacher growth and promoting mentally healthy, motivated, and effective teaching professionals. Interestingly, a counter-intuitive finding suggests that teacher autonomy is significantly and negatively correlated with learner performance, whereas learner-centered practices showed no significant impact (Gargarita, 2025) [25].

Taken together, these findings from the Philippines suggest that while teacher autonomy is essential for professional growth, instructional innovation, and teacher well-being, its positive effects on learner outcomes depend on how autonomy is exercised, supported, and aligned with effective teaching practices. Accordingly, fostering autonomy should be complemented by structured guidance, professional development, and evidence-based instructional strategies to ensure that both teacher and learner outcomes are optimized. Even in contexts where teachers demonstrate high performance and frequently employ diverse teaching styles, such as among Cebu City faculty, educators must remain responsive and continue refining their methods to address evolving educational challenges (Narsico, Narsico, & Polinar, 2023) [48]. These observations underscore the importance of balanced autonomy, in which teachers are empowered to make independent instructional decisions while receiving the necessary support to align their practices with learner needs (Gargarita, 2025; Qi Lin, 2025) [25, 55].

Most research established its grounds on the perspectives of actual teachers in the field, or those who are already teaching, it is also in the same sense, to look and assess the preservice teachers' perspectives as they represent the future of educators all over the globe. This study shall contribute its findings to the enhancement and strengthening of the preservice teachers' autonomy in instructional use of AI, that will assist them to properly integrate and use AI in their instructions while also considering their autonomy in doing so.

Theoretical Framework

The foundation of this study is based on the three theories and their intersection to the preservice teacher autonomy in the instructional use of artificial intelligence.

First, the ***Self-Determination Theory*** **(SDT)**, which explains that a person's behavior, motivation, and immersion in goal-directed activities is influenced by the satisfaction of basic psychological needs. It provides a strong theoretical foundation for understanding motivation and learning outcomes by emphasizing the fulfillment of three basic psychological needs: autonomy, relatedness, and competence (Deci & Ryan, 2000) [14]. Among these needs, autonomy plays a central role, as it allows individuals to experience a sense of control, personal meaning, and freedom in decision-making. The fulfillment of psychological needs, particularly autonomy, supports meaningful participation and sustained motivation, which are critical for effective learning and positive performance outcomes (Deci & Ryan, 2000) [14].

Second, the ***Three Paradigms Framework,*** which explains artificial intelligence in education through three paradigms: AI-directed, AI-supported, and AI-empowered (Ouyang and Jiao, 2021). In the first paradigm, AI directs learning, and the user functions mainly as a recipient; in the second, AI supports learning, and the user works as a collaborator with AI; and in the third, AI empowers learning, and the user takes greater agency and leadership. This helps identify the significance of AI integration in education while also looking at how it affects the preservice teachers' autonomy in instructional delivery.

Third, the ***Technological Pedagogical Content Knowledge (TPACK)*** *by Mishra & Koehler, 2006* framework explains that effective teaching is not limited to knowing the subject matter and how to teach it. Rather, effective teachers must also understand the content to be taught, the pedagogy to deliver it, and the appropriate integration of technology to support learning in a meaningful way. These forms of knowledge should work together, not separately, to make teaching truly effective.

In the context of this study, these theories manifest a strong basis for measuring the preservice teacher autonomy in the instructional use of AI. First, SDT helps identify whether preservice teachers experience ownership, control, and motivation in their use of AI. Then, the Three Paradigms Framework helps identify the extent to which AI functions as a driving force, aid, or empowering resource in their teaching practice. TPACK, in turn, helps in explaining whether they possess the necessary knowledge to integrate AI meaningfully into lesson planning, instructional delivery, assessment and feedback. Through this interaction, the study is able to assess not only how preservice teachers use AI,

but more importantly, how much control they retain over its use, and whether such use reflects responsible, informed, and autonomous teaching practice.

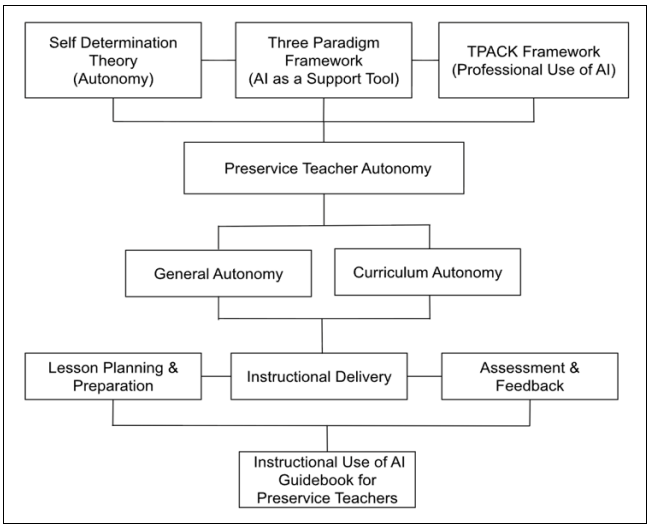

Fig 1: This schematic diagram shows the theoretical-conceptual framework of preservice teacher autonomy on the instructional use of AI

The framework provides an overview of how the three theories converge in the central construct of the study, which is preservice teacher autonomy, measured through survey questionnaires and interview questions. This autonomy is reflected in three instructional dimensions: lesson planning and preparation, instructional delivery, and assessment and feedback. Furthermore, these dimensions are examined to determine the opportunities and challenges posed by the instructional use of AI in relation to preservice teacher autonomy.

Statement of the Problem

This descriptive study aims to measure the extent of preservice teacher autonomy in the use of instructional artificial intelligence among 4th-year college students in a state university in Cebu City for the school year 2025-2026. Specifically, it answers the following questions:

1. What is the autonomy of preservice teachers' on the instructional use of artificial intelligence in terms of:
    1.1 General Autonomy
    1.2 Curriculum Autonomy
2. What is the frequency of preservice teachers' autonomy on the instructional use of artificial intelligence in terms of:
    2.1 Lesson Planning and Preparation
    2.2 Instructional Delivery
    2.3 Assessment and Feedback
3. What challenges and opportunities do preservice teachers have regarding autonomy and instructional use of artificial intelligence?
4. Based on the findings of the study, what output and recommendations can be proposed to strengthen pre-service teachers' autonomy in the instructional use of artificial intelligence?

Significance of the Study

This study is significant for preservice teachers because it determines the extent of their autonomy in the instructional use of artificial intelligence, particularly in making pedagogical decisions, selecting appropriate AI tools, and adapting these tools to learners' needs. It also provides insight into their readiness to use AI in a responsible, effective, and pedagogically sound manner, as well as the factors that influence such autonomy, including training, institutional support, and access to technology. Furthermore, this study contributes to the existing body of knowledge by highlighting the role of teacher autonomy in the meaningful and ethical use of AI in instruction. Its findings may also serve as a basis for future studies aimed at improving teacher preparation, strengthening instructional practices, and enhancing teacher performance and learner outcomes.

Definition of Terms

The following terms, considered imperative to the study, are operationally defined to help readers understand the text.

Autonomy refers to a person's freedom and independence in choosing what to do and what to say in a specific context. In this study, it refers to the professional discretion and freedom of teachers in making decisions about their teaching goals in a classroom context.

Teacher autonomy: This refers to the independent decisions teachers make about how they implement instruction, modify lessons, and manage the classroom. In the context of this study, it refers to the freedom of teachers to do their own instructional delivery inside the classroom, whether influenced by external and internal factors.

General Autonomy generally refers to the teachers' discretion in integrating artificial intelligence (AI) tools for instruction. In the context of the study, it is the preservice teachers' freedom in deciding, selecting, adapting, and utilizing AI tools to enhance instructional delivery.

Curriculum Autonomy points out to the control over the instructional content and delivery of the teacher within the adherence of the curriculum. In the context of this study, it refers to the freedom that teachers possess in making decisions about what and how content in the classroom is taught.

Artificial Intelligence generally refers to computer systems or technologies designed to perform tasks that normally require human intelligence, such as learning, reasoning, problem-solving, generating content, and making decisions. In this study, it is defined as the computer systems or technologies educators use in their instruction and classroom.

Instructional Artificial Intelligence: This refers to the artificial intelligence systems designed to assist teachers in the other portion of the teaching-learning process like providing explanations, allowing simulations, and assisting in the demonstration of a topic/concept. In the context of this study, this generally refers to the materials or tools used and incorporated in the teaching process that are AI-based.

Preservice Teacher is a term used in defining college students who are enrolled in a teacher education program. In the context of this study, the term will be used in a broader aspect, encompassing the undergraduate students enrolled in teacher education programs to complete coursework plus practicum or internship programs.

Preservice teacher autonomy refers to the capacity of preservice teachers to exercise control and responsibility over their instructional decisions while using artificial intelligence. In this study, this refers to their ability to remain the primary decision-makers in planning, delivering, assessing, and managing instruction, rather than passively relying on AI-generated outputs.

Lesson Planning and Preparation refers to the procedure by which preservice teachers plan on what to teach, how to teach it, and the materials to use. In the context of the study, this means the teachers' ability to exercise their autonomy in deciding instructional activities and utilizing AI as a supplementary tool for teaching and learning.

Instructional Delivery refers to the actual implementation of teaching strategies, methods, and classroom activities during the teaching-learning process. In the context of this study, it pertains to how preservice teachers explain concepts, support classroom instruction, and enhance learning while remaining in control of pedagogical decisions.

Assessment refers to ways in which teachers evaluate and monitor to gauge students' learning. In the study, it involves how AI tools are used by preservice teachers in designing and organizing valid and appropriate assessments aligned with lesson objectives.

Feedback refers to the response and comments by teachers to guide students in their progress of learning. In this study, this is how preservice teachers use AI tools as tools to assist in giving feedback to students.

2. Review of Literature and Studies

This chapter highlights literature and related studies regarding the teacher autonomy, instructional use of artificial intelligence, AI literacy and competency of teachers in education, and education 4.0. The synthesis of these relevant studies presents the gap in the study concerning preservice teachers' autonomy in the instructional use of artificial intelligence.

Teacher Autonomy in the Classroom

Teacher autonomy has been widely acknowledged to be an existing concept and practice in the educational landscape around the globe. The feeling of autonomy in the classroom makes teachers feel committed and efficient in their instructional delivery and classroom management (Parker, 2015) [52]. Teacher autonomy is also closely linked to the pedagogical approaches of the teachers in instructional delivery, and is found to have a positive influence on the motivation of the learners to participate during classes (Abun *et al*., 2019) [1]. It bears emphasis on the degree to which teachers are empowered to independently decide how they teach, plan lessons, and manage their classrooms without heavy external control (Montecalbo, 2025) [45]. Even so, educational reforms often reduce autonomy, impacting teachers' well-being and professional identity (Paradis, Lutovac & Kaasila, 2015) [51]. Albeit, there is a need to further study the level of autonomy of the teachers in their class in order to support their professional well-being (Paradis, Lutovac & Kaasila, 2015) [51].

In a classroom, teachers have to craft their instructional designs and plan their lessons that can cater to the learners' needs and uniqueness in acquiring and understanding a lesson. Crucially, they have to adapt or create a multitude of methods and techniques to be able to tailor these needs of the students (Van Geel *et al*., 2023) [65]. Teacher autonomy is linked to higher teacher retention, especially when teachers have freedom over instruction, classroom management, and assessment (Montecalbo, 2025) [45]. Additionally, teachers who are given autonomy in executing project-based learning tend to gain increased independence in designing learning experiences that meet their students' needs, encouraging creativity and innovation in the classroom (Agudelo & Morales-Vasco, 2019) [2]. But there are still issues pertaining to the degree of teacher autonomy inside the classroom and how it affects their freedom in the academic delivery. For instance, curriculum policies in Europe, especially in Nordic countries, have reshaped teacher autonomy by the guidelines that aim to standardize quality, but they often limit teachers' instructional freedom by prescribing content and pacing (Dieudé & Prøitz, 2024) [16]. In the United States of America, scripted lessons and rigid curriculum frameworks reduce teachers' autonomy, turning them into implementers rather than designers of instruction, hence they feel constrained in adapting lessons to student needs (Narayanan, Shields & Delhagenc, 2024) [47]. In a meta-analysis of over 30 studies, it is found that excessive control on curriculum guidelines reduces innovation, while autonomy in curriculum implementation improves student achievement (Pramanik, 2019) [53].

In the Philippine context, the issue of limited teacher autonomy in the classroom still persists. Teachers across different career paths expressed that limited autonomy in lesson planning and instructional delivery reduces motivation and innovation (Ibarra, 2024) [31]. Greater teacher autonomy is associated with stronger self-efficacy and reduced stress, which in turn contributes to improved teacher well-being and higher teaching quality (Villegas *et al*., 2025) [66]. In conjunction with this, comparative analysis of OECD countries indicates that flexible curricula boost teacher autonomy by enabling adaptation to local contexts, while rigid national curricula limit teachers' capacity to customize instruction (OECD, 2022) [50]. Yet, be as it may, there are still studies disputing the wide influence of factors to the teacher autonomy in the classroom. In 2017, as DepEd Order No. 42, s. 2017: National Adoption and Implementation of the Philippine Professional Standards for Teachers was implemented, it was also found to have influence on the classroom autonomy practice. The PPST outlines 37 strands across seven domains, including curriculum and planning. Although intended to standardize teacher quality, it constrains teacher autonomy by enforcing strict compliance with prescribed competencies and lesson plan formats. During the pandemic, teachers all over the globe have to adapt to distance learning modalities, which also shifted their ways of teaching and the factors involved. Teachers indicated that rigid DepEd guidelines restricted their autonomy in modular instruction, and it must be emphasized that increased flexibility in adapting instructional methods is essential for effective teaching and stronger student engagement, particularly in distance learning settings (Subla, 2023) [60]. In higher education, curriculum reforms in teacher education programs aligned with DepEd and CHED guidelines also often constrain teacher autonomy by enforcing rigid competencies, leaving teachers with little flexibility to adapt instruction to local contexts (Carvajal *et al*., 2025) [7].

Teacher Autonomy in AI-Supported Classrooms

Artificial intelligence (AI) in education represents a transformative approach that uses advanced technologies to enhance learning, personalize instructional content, and reshape how students and teachers engage with information. In the current era of rapid technological advancement, AI supports higher-order skills such as innovation, creative thinking, and sustainable development, which are essential

for societal and technological progress (Esteban-Guitart & Gee, 2020) [22].

Teachers are among the most affected stakeholders in the integration of AI in education. Many educators utilize AI to develop multifaceted instructional approaches that support curriculum planning, adaptive learning, and differentiated instruction (Filiz *et al*., 2025) [23]. Teachers value AI tools that enhance lesson efficiency, promote interactive learning, and personalize instruction, as these tools contribute to improved student learning outcomes (Filiz *et al*., 2025) [23]. At present, teachers are increasingly embracing generative AI, often taking an active leadership role in its adoption and viewing it as a catalyst for innovation in teaching and learning (Zhai, 2025) [69]. However, changes in teachers' roles arise from the interplay of technological developments, policy expectations, and social demands, yet are constrained by skill gaps, ethical concerns, and psychological challenges, underscoring the need for comprehensive institutional support (Ren, 2025) [56].

Teachers choose to integrate AI into instructional delivery because it supports the development of critical thinking, creativity, problem-solving, and presentation skills through real-world applications, interactive learning, and multimodal engagement (Filiz *et al*., 2025) [23]. Tools such as ChatGPT, Character.ai, Canva, Gamma, and Magic School facilitate personalized learning, collaboration, creative expression, and continuous feedback, indicating that AI is most effective when it complements rather than replaces traditional teaching practices (Filiz *et al*., 2025) [23]. Despite these advantages, several factors influence teachers' confidence in using AI. While pedagogical benefits and psychological engagement encourage AI adoption, technical challenges, increased workload, content and cultural mismatches, and ethical concerns continue to hinder effective integration (Filiz *et al*., 2025) [23]. Institutional support also plays a critical role in shaping teacher autonomy in AI-supported classrooms. Although many teachers report access to training and technical assistance, fewer experience clear policy guidance or structured opportunities for peer collaboration. This imbalance suggests that insufficient policy direction and limited collaborative support may restrict consistent and confident AI integration in educational practice (Umar *et al*., 2025) [64]. Moreover, some teachers express concerns that AI may weaken teacher leadership by reducing professional autonomy, limiting collaborative decision-making, and positioning educators as passive users of algorithm-driven systems rather than active instructional leaders (Ghamrawi *et al*., 2024) [26].

AI Literacy and Competency of Teachers in Education

As artificial intelligence continues to reshape pedagogical approaches in higher education, institutions are increasingly compelled to remain aligned with developments that ensure the relevance of AI within the education sector (Rütti-Joy *et al*., 2024). Artificial intelligence has become ubiquitous and is now integrated into day-to-day activities, shaping social interactions across the world (Ayanwale *et al*., 2024) [5]. This is evident in how it supports communication, decision-making, access to information, and both personal and professional learning. Consequently, universities must adapt to the rapidly evolving landscape of artificial intelligence by developing a comprehensive understanding of AI-supported tools, establishing appropriate institutional policies, and addressing the ethical concerns associated with their use in order to maximize AI's potential in enhancing teaching and learning processes (Schallert-Vallaster, 2025).

AI literacy is described as the ability to evaluate AI technologies, communicate with AI integration and apply them in appropriate situations effectively (Long & Magergo, 2020) [42]. This propounds that AI literacy is not only limited to knowing AI tools but it goes beyond crucial and practical application into diverse contexts with full responsibility and ethics. A study reviewed thirty peer-reviewed journals and was able to present four core dimensions of AI literacy namely, apprehension of AI, application of AI, evaluation of AI, and communicating its ethical issues (Ng *et al*., 2021) [49]. Another study put emphasis by showing the distinction between AI literacy and AI competency, literacy is defined mainly to what a person knows, while competency refers to how well that knowledge is put into practice (Chiu *et al*., 2024) [10]. AI literacy is transdisciplinary and that it should be understood as a generalized capability of a person who possesses digital literacy, data literacy, and AI ethics, rather than a limited technical skill (Yim, 2024) [68]. Thus, AI literacy in education must be viewed as a broad and essential capability that enables teachers and learners to use AI critically, ethically, and effectively.

In this context, educators must possess the necessary digital skills and competencies to effectively integrate artificial intelligence into instruction, as these skills are essential in the contemporary educational landscape (Tenberga, 2024). However, a notable gap persists in AI literacy and competency, which presents challenges and constraints for educators in developing comprehensive frameworks for the effective and responsible use of AI. It was reported that a crucial aspect of why teachers feel disconcerted about AI technology integration is that they lack practical knowledge of how AI tools can be effectively integrated into classroom instruction (Crompton & Burke, 2023) [12]. In similar findings, it was found that although AI literacy is one of the widely sought-after research topics in education, teachers' practical knowledge is not yet broadly studied in the literature. An issue that often resurfaces is that ethics in AI is deemed more as an understanding of its technicalities rather than as part of teachers' professional judgment (Sperling *et al*., 2024) [58]. For preservice teachers, AI literacy is important, yet it is still underexplored. A study found that stronger knowledge of AI literacy yielded positive results in AI use, AI detection, ethical use, and problem-solving skills, which are crucial skills that preservice teachers need to learn early in their practice teaching, as these also serve as their foundation for understanding AI in their future teaching (Ayanwale *et al*., 2024) [5]. This means that previous literature has placed more focus on what AI can do in classrooms than on how teachers can be prepared to use it responsibly and effectively. These findings further justify the argument that, without sufficient literacy and competency, the integration of AI in education risks being superficial, inconsistent, or misaligned with pedagogical goals. Considering the rapid advancements in AI technology, it is critically important for teachers not only to understand when and how to use AI tools, but also to evaluate their reliability, limitations, and ethical implications.

The Education 4.0

Education, as one of humanity's fundamental necessities, has been significantly transformed by the emergence of

science and technology, which has also brought major changes to overall living standards. At a rapid pace, innovations such as computers, smartphones, cloud computing software, and nanotechnologies have been developed, all of which are products of technological advancement (Stuchlikova, 2016) [59]. These developments have further given rise to artificial intelligence, robotics, the Internet of Things, autonomous vehicles, biotechnology and nanotechnology, 3D printing, materials science, quantum computing, and energy storage technologies (Diwan, 2017).

In line with this technological progress, the education sector has undergone a transformative shift, evolving from Education 1.0 to Education 4.0. Education 4.0 emphasizes the relationship between humans and technology and promotes a new vision of learning that enables learners to holistically develop the skills and knowledge essential for their professional growth (Fisk, 2017). Moreover, it encourages students and educators to take advantage of modern infrastructure and technologies to enhance teaching pedagogies, educational philosophies, learning models, information sources, and learning methods, while also redefining the roles of both teachers and students (Miranda *et al*., 2021) [44]. This paradigm represents a shift toward change-driven education characterized by dynamic, innovative, and independent learning (Sharma, 2019; Butt *et al*., 2020). Furthermore, Education 4.0 is student-centered and focuses on core competencies, using digital technologies as tools for learning and educational management (Akturk *et al*., 2022; Miranda *et al*., 2019; Srivani *et al*., 2022).

Artificial intelligence, one of the key technologies of the Fourth Industrial Revolution and a major driving force behind the development of Education 4.0, is defined as the ability of machines to acquire knowledge, generate decisions using algorithms, and emulate human intelligence (Ertel, 2025; Markauskaite *et al*., 2022). In the context of education, AI is regarded as a branch of computer science capable of performing tasks associated with human cognitive processes, such as reasoning, decision-making, and learning (Yan *et al*., 2024). As these capabilities continue to advance, artificial intelligence is increasingly transforming education by reshaping teaching methods, enhancing learning experiences, and improving educational management systems.

Taken as a whole, the existing literature suggests that although Education 4.0 and AI-supported instructional tools offer considerable potential to enhance teaching and learning, they also raise important concerns regarding teacher autonomy, particularly in relation to instructional decision-making. Much of the current research concentrates on in-service teachers, examining their competencies, perceptions, and the institutional conditions shaping AI use in classrooms. Comparatively little attention has been paid to student teachers, despite their role as the next generation of educators (Khotima *et al*., 2020) [37]. As student-service teachers are still forming their professional identities, pedagogical beliefs, and instructional approaches, their experiences with AI-supported instruction warrant closer examination. Understanding the extent to which preservice teachers retain autonomy when using instructional AI is especially important, as it sheds light on how emerging educators negotiate the relationship between technological support and pedagogical control. Such an examination also helps clarify whether AI functions primarily as an enabling resource or as a potential constraint on instructional decision-making. Accordingly, this study addresses a notable gap in the literature by investigating preservice teacher autonomy within AI-supported instructional delivery. By focusing on this underexplored group, the study aims to contribute insights that can inform teacher education programs, institutional policies, and support structures designed to foster autonomous, ethical, and effective integration of AI in future classroom practice.

3. Research Methodology

Research Design

The study employed an explanatory sequential research design to investigate the impact of preservice teacher autonomy on their tendency to utilize artificial intelligence in instructional delivery. By definition, an explanatory sequential research design is a mixed methods research design in which quantitative data are collected and analyzed first, followed by qualitative data collection and analysis to explain, elaborate, or clarify the quantitative results. By combining quantitative and qualitative data, the study aims to offer a comprehensive perspective on how autonomy shapes the adoption of innovative teaching technologies.

Research Environment

The study was conducted at a distinguished state university in Cebu City recognized by the Philippine government for its academic excellence and commitment to quality education. The institution provides a learning environment that is conducive to academic inquiry and educational research. It offers accredited degree programs in Elementary and Secondary Education, ensuring compliance with national standards for teacher education. In addition, the university has access to modern facilities, technology resources, and academic support services that are essential for research. For these reasons, the selected university serves as an appropriate setting for investigating the level of preservice teachers' autonomy in the instructional use of artificial intelligence.

Research Participants

The study employed a mixed-method approach in the selection of respondents. For the quantitative part (survey questionnaires), respondents were selected through stratified random sampling, as this method is ideal for studies with a large and known target population (Wachira, 2018). The researchers established specific criteria for inclusion in the study. For the qualitative part (focus group discussion), purposive sampling was used to ensure that the selected participants were fourth-year preservice teachers who had experience using artificial intelligence tools for instructional purposes. This approach ensures that the participants can provide information-rich and meaningful insights regarding preservice teachers' autonomy in the instructional use of AI (Patton, 2015).

The number of respondents for each degree program is presented in the table below:

Table 1: Distribution of Respondents According to Degree Programs

Degree Program	Frequency	Percentage
Bachelor of Secondary Education (BSED) Major in Science	20	38.46 %
Bachelor of Special Needs Education (BSNED)	18	34.62 %
Bachelor of Secondary Education (BSED) Major in Filipino	4	7.69 %
Bachelor of Secondary Education (BSED) Major in Mathematics	4	7.69 %
Bachelor of Elementary Education (BEED)	2	3.85 %
Bachelor of Secondary Education (BSED) Major in English	1	1.92 %
Bachelor of Secondary Education (BSED) Major in Social Studies	1	1.92 %
Bachelor of Physical Education (BPED)	1	1.92 %
Bachelor of Technological and Livelihood Education (BTLED)	1	1.92 %
Total	**52**	**100%**

As seen in table 1, it reveals that most of the respondents were from the BSEd major in Science, with 20 respondents, constituting 38.46% of the total population, followed by BSNEd, with 18 respondents, or 34.62% of the population. The BSEd majors in Filipino and Mathematics each had 4 respondents (7.69%), while BEEd had 2 respondents, or 3.85% of the total population. The smallest number, with only 1 respondent (1.92%), came from four teacher education degree programs, namely: BSEd majors in English and Social Studies, Bachelor of Physical Education (BPED), and Bachelor of Technology and Livelihood Education (BTLED).

This indicates that the respondents were mostly drawn from the BSEd major in Science and BSNEd, which together comprised 73.08% of the total sample. Therefore, the results of the study largely reflect the responses of students from these two degree programs. Nevertheless, since this study aims to measure and understand preservice teachers' autonomy, their respective degree programs were not considered as variables influencing their autonomy in the classroom.

Research Instruments

Survey Questionnaires

The researchers used an adapted, modified, and validated survey questionnaire to measure the respondents autonomy and their instructional use of artificial intelligence tools. The questionnaire consists of three parts. Part I focuses on the respondents' profile, including gender, degree program, access to digital devices, internet connectivity, and prior exposure to educational technology or artificial intelligence. Part II assesses preservice teachers' autonomy using an adapted and modified version of the Teachers' Autonomy Scale (TAS), based on the study of Swatevacharkul (2022). The instrument, originally developed by Pearson and Hall (1993) and later utilized by Swatevacharkul (2022), uses a five-point Likert scale ranging from strongly agree to strongly disagree and includes two subscales: curriculum autonomy with six statements and general teaching autonomy with twelve statements. To make the instrument relevant to the present study, the researchers modified the TAS to reflect the instructional use of artificial intelligence. Part III examines the frequency of preservice teachers' instructional use of AI tools using a five-point rating scale ranging from never to always. This part was adapted and modified from the Teachers' Digital Competence framework of Ergul and Tasar (2023) and tailored to the study.

Focus Group Discussion

Following the administration of the survey questionnaire, the researchers purposively selected 17 respondents across all degree programs to participate in a focus group discussion. Selection criteria were established to ensure that all participants have prior knowledge and experience in using artificial intelligence for instructional purposes. The focus group questions were designed to facilitate in-depth discussion and to explore preservice teachers' perspectives on the instructional use of artificial intelligence tools. The interview questions were constructed by researchers and validated by a subject-matter expert in language teaching. All focus group discussions were audio-recorded and transcribed verbatim. The transcribed data were then analyzed using inductive thematic analysis (Naeem & Zuem, 2022) to identify meaningful units and generate main themes that guided the interpretation of the findings.

Data Gathering Procedure

Pre-Data Gathering

The respondents were divided into two groups. The first group completed the survey questionnaire to collect quantitative data, while the second group, drawn from the first, participated in interviews to provide qualitative data. The first group was selected through stratified random sampling, as the target population in this mixed-method study consisted of tertiary learners from a CHED-accredited state university. They were also grouped according to their degree programs. The second group, selected from the first, was chosen through purposive sampling, allowing the researchers to select participants based on their expertise and unique experiences relevant to the research objectives. Prior to data collection, all respondents were provided with a consent form and informed of all necessary details. For the convenience of respondents, and given the university's fully online classes for all undergraduate programs in the College of Teacher Education, the survey was created using Google Forms and distributed online. For the convenience of the selected respondents, and given the university's fully online undergraduate programs in the College of Teacher Education, interviews were conducted online via Google Meet. Prior to the interview, selected participants were provided with a summary of the research problem and objectives. Both written and verbal consent were obtained to ensure proper ethical protocol.

Data Gathering

The target population responded to a set of overall 28 Likert-scale questions that had been adapted, modified, and validated. At the start of the interview, the researchers introduced themselves and the research they were conducting to all the interviewees inside the Google Meet. The interviewers/researchers asked 5 open-ended questions to each of the respondents aligned with the objectives of the study.

Post-Data Gathering

Following the interview, respondents were informed that they might be contacted for further clarifications, apart from

thanking them for sincerely investing time and effort, which were essential to the progress of the study. A token of gratitude was also given to participants who participated in the focus group discussion.

Data Analysis

a. Quantitative Data Analysis and Statistical Treatment

To measure the level of preservice teachers' autonomy in the instructional use of artificial intelligence tools, the first part of the questionnaire measures autonomy in terms of general autonomy and curriculum autonomy, using a five-point Likert scale ranging from one to five. The second part of the questionnaire will measure the frequency of use of instructional artificial tools in terms of lesson planning and preparation, instructional delivery, and assessment and feedback, using a five-point Likert scale ranging from one to five. For the statistical analysis of the data, the following statistical tools were utilized: frequency count, to determine how often responses occur across categories; percentage, to identify the distribution and proportion of responses for each variable; mean, to measure the level of preservice teachers' autonomy and the frequency of instructional use of artificial intelligence; and standard deviation, to determine the degree of variation or dispersion of responses from the mean. The data were treated using MS Excel and JASP to obtain the quantitative component.

b. Qualitative Data Analysis

To analyze the qualitative data obtained from the transcribed focus group discussions, the study employed inductive thematic analysis (Naeem & Zuem, 2022) to identify emerging patterns and themes. The data were systematically coded through open coding, allowing responses to be organized into initial codes, subcategories, and broader thematic categories. The resulting themes were then examined and interpreted in relation to the study's theoretical framework and relevant literature. The data were treated using Google Docs, which allowed researchers to narrow down the responses to themes.

Ethical Considerations

The researchers adhere to establishing ethical standards to prevent misconduct and ensure participant safety. There were no conflicts of interest, and no vulnerable groups were involved. The study had no physical, psychological, social, or financial risks to participants. The study also asked approval from Cebu Normal University's Research Ethics Committee, and formal request letters and consent forms were issued to the respondents (preservice teachers). The respondents were assured that the participation was voluntary, responses could be skipped, and withdrawal at any time would incur no penalties. Participants were also informed of data confidentiality, the intended use of information, and the ability to contact the researchers with questions. Tokens of appreciation were given to the participants. In disseminating results, pseudonyms were used to maintain anonymity. Access to collected data is and will be restricted to the principal researcher, and all participant information were deleted after the study's completion.

4. Results and Discussion

This section deliberately presents, analyzes, and interprets the data collected in the study to determine the level of preservice teacher autonomy in instructional use of artificial intelligence. Further presentations and discussions of the results are displayed in the succeeding subsections.

General Autonomy in the Instructional Use of AI

General autonomy pertains generally to the teachers' freedom and discretion in incorporating artificial intelligence (AI) tools into instruction. In this study, it refers to preservice teachers' ability to decide, choose, modify, and use AI tools to improve instructional delivery.

Table 2: General Autonomy of Preservice Teachers in the Instructional Use of AI

S. No	Indicators	Mean	Std. Deviation	Interpretation
1	I have freedom to be creative in my teaching approach when using AI tools.	4.346	0.861	Very high
2	I have control as to the selection of AI-supported student-learning activities.	4.404	0.799	Very high
3	I set standards of behavior in my class when using AI tools.	4.231	0.983	Very High
4	I don't have much discretion on my part when deciding how AI should be used in teaching.	4.250	0.926	Very High
5	I set the time schedule for using AI tools in my class is under my control.	4.058	0.895	High
6	I seldom use alternative AI tools in my class.	4.269	0.843	Very High
7	I follow my own guidelines on AI-supported class.	4.212	0.915	Very High
8	I have little to no control on how AI-based classroom space is used.	4.231	0.899	Very High
9	The evaluation and assessment activities that use AI in my class are selected by others.	3.981	0.918	High
10	I select the AI-based teaching methods and strategies I use with my students.	3.904	1.034	High
11	I have little say on how scheduling of use of AI tools are used in my class.	3.885	0.922	High
12	I have only less flexibility in how major problems related to AI use are solved.	4.000	0.816	High
	Total	**4.148**	**0.901**	**High**

Table 2 shows that preservice teachers do not heavily rely on AI, as they demonstrate high general autonomy in its instructional use. The grand mean of 4.148 and standard deviation of 0.901 suggest that they remain in control of selecting and using AI-supported learning activities. This indicates that preservice teachers view AI as a support tool and still make key classroom decisions, especially in planning instruction, designing activities, and applying AI in teaching.

Consequently, the participants' freedom to be creative in classroom teaching suggests that they viewed AI as a flexible guide rather than a fixed script to be followed in all situations. In teaching, this is important because tasks, explanations, and demonstrations often need to be adjusted to match learners' needs and lesson objectives. This aligns

with studies on teacher autonomy, which show that when teachers have the freedom to choose materials, methods, and strategies, they are more likely to innovate and tailor instruction to their students' needs (Chen, 2024) [9]. Similarly, it is found that teachers value AI because it helps generate ideas, supports planning, and personalizes learning; however, its effective educational use still depends on teachers making fair and sound instructional decisions (Karataş & Yüce, 2024) [34].

The table also shows that the respondents' general autonomy had the potential to develop where effective AI integration was focused. The study indicated that preservice teachers were not approaching AI as a tool for convenience for faster and easier work, but as a tool they perceived could be managed within their own teaching dilemmas. Thus, teachers' confidence and self-efficacy were linked with stronger AI integration in the teaching field, especially when there was enough support (Collie *et al*., 2024) [11]. In a parallel study, AI-focused interventions were found to improve decision-making behavior and professional development, which meant that when teachers were supported in how AI was truly applied, they were more likely to use it in ways that remained aligned with their sincere intentions toward the teaching-learning process and not become dependent on it (Duan & Zhao, 2024) [17].

Curriculum Autonomy in the Instructional Use of AI

Curriculum autonomy refers to the freedom teachers have to decide what content will be taught in the classroom and how it will be delivered.

Table 3: Curriculum Autonomy of Preservice Teachers in the Instructional Use of AI

S. No	Indicators	Mean	Std. Deviation	Interpretation
1	I use my own guidelines and procedures when integrating AI tools into instruction in my class.	4.294	0.701	Very high
2	In my situation, I have little say over which AI tools are used to teach content and competency skills.	4.115	0.855	High
3	My teaching focuses on those goals and objectives I select when using AI tools.	4.000	1.029	High
4	I take most part in the way I integrate AI in my class.	4.231	0.783	Very high
5	I choose the AI tools and digital materials to be used in class by myself.	4.212	0.750	Very high
6	The AI-supported content taught in my are those I personally select.	4.154	0.777	High
	Total	**4.168**	**0.816**	**High**

The participants showed autonomy in the instructional use of artificial intelligence, particularly in terms of curriculum autonomy. As reflected in the grand mean of 4.168 and standard deviation of 0.886, preservice teachers affirmed that they exercise professional judgment in deciding how AI should be used in their classes. This suggests that they view AI as a resource that could be aligned with their teaching objectives rather than as a tool that dictates instruction. This supports the view that teacher autonomy includes the ability to make decisions about the curriculum, which remains essential since instructional design is one of the teacher's primary roles, even with generative AI offering ready-made lesson components and content suggestions (Hemmler *et al*., 2023) [29].

Furthermore, the results suggested that preservice teachers were starting to view themselves as capable of making curriculum-related decisions and not as passive users of AI, which contributed to effective classroom practice. However, curriculum autonomy needed to be further strengthened by reinforcing teacher experiences that developed AI literacy, ethical use, and curriculum alignment. This implication aligned with studies that focused more heavily on the use of AI than on the professional development teachers required to integrate AI, which meant that teacher education focused not just on exposing preservice teachers to AI tools but also on helping them learn how to use AI responsibly in ways that remained trustworthy to content and instructional goals (Tan *et al*., 2024).

Preservice Autonomy in AI-Based Lesson Planning and Preparation

Lesson planning and preparation are one of the crucial parts of teaching. This is when teachers exercise their autonomy to choose the content, strategies, learning activities, and instructional resources that best align with the lesson objectives and the needs of their students.

Table 4: Frequency of Preservice Teacher Autonomy in Instructional Use of AI in terms of Lesson Planning and Preparation

S. No	Indicators	Mean	Std. Deviation	Interpretation
1	I use AI tools to plan my lessons.	3.250	0.860	Sometimes
2	I use AI tools to generate teaching materials.	3.231	0.921	Sometimes
3	I use AI tools to design my teaching materials.	3.135	1.030	Sometimes
4	I use AI tools beyond class hours to prepare for my class.	3.404	0.995	Often
	Total	**3.225**	**0.952**	**Sometimes**

This portion revealed that preservice teachers sometimes relied on artificial intelligence when preparing and crafting their lessons, as reflected in the grand mean of 3.255 and the standard deviation of 0.952. While the table indicates a fair level of independence in using AI tools for lesson planning and preparation, such use is not yet frequent in their regular practice; therefore, they maintain their autonomy in planning and creating lessons for their classes. This further indicates that although artificial intelligence is acknowledged and moderately utilized by preservice teachers in lesson planning and preparation, its integration remains in a developing stage rather than being consistently maximized.

Additionally, the results suggest that preservice teachers exploring artificial intelligence as a support tool are cautious, selective, and critical in fully using it for creative and material development lessons. This is consistent with a study on preservice teachers, which found that perceived usefulness, ease of use, attitudes, and intention to use AI are significantly related (Alejandro *et al*., 2024) [3]. This purports that preservice teachers use AI when they find it practical and beneficial, supporting the result that their use

is moderate rather than frequent or fully integrated.

Preservice Autonomy in AI-Based Instructional Delivery

Instructional delivery might be one of the main challenges of these preservice teachers, as they must not only have the capability to know what content to input and facilitate, but most importantly, how they will teach content effectively.

Table 5: Frequency of Preservice Teacher Autonomy in Instructional Use of AI in terms of Instructional Delivery

S. No	Indicators	Mean	Std. Deviation	Interpretation
1	I use AI tools to simplify the concepts for students.	3.808	0.930	Often
2	I use AI tools to improve teaching and learning during classroom instruction.	3.750	0.947	Often
3	I allow or encourage to use AI tools in learning.	2.692	1.164	Rarely
	Total	**3.417**	**1.014**	**Often**

Table 5 shows that preservice teachers do use AI in their instructional delivery, but do not directly allow it to influence their pedagogy or approach, as observed in the grand mean of 3.417 and a standard deviation of 1.014. The highest-rated indicators, both interpreted as often, show that preservice teachers use AI mainly to simplify concepts and improve instruction, viewing it as a support tool for teaching. In contrast, the lowest-rated indicator, interpreted as rarely, suggests that they are less likely to encourage students to use AI in learning.

This suggests a cautious and teacher-controlled approach, in which preservice teachers are more comfortable using AI under their own supervision than promoting its direct use by learners, consistent with findings that they use AI only when necessary and view it as a support tool rather than an independent partner in instruction (Guan *et al*., 2025) [28].

Preservice Autonomy in AI-Based Assessment and Feedback

Teachers' autonomy in assessment and feedback allows them to decide on appropriate ways of evaluating students' learning and providing responses that support their academic growth and improvement.

Table 6: Frequency of Preservice Teacher Autonomy in Instructional Use of in terms of Assessment and Feedback

S. No	Indicators	Mean	Std. Deviation	Interpretation
1	I use AI tools to create assessments such as quizzes, tests, activities.	3.269	1.050	Sometimes
2	I use AI tools to provide feedback to my students' work.	2.346	1.251	Rarely
3	I use AI tools to track and monitor my students' learning progress.	2.615	1.239	Sometimes
	Total	**2.743**	**1.180**	**Sometimes**

Table 6 indicates that preservice teachers sometimes used AI for assessment and feedback, as evidenced by the grand mean of 2.743. This indicates that AI is not yet a frequent or fully developed practice in their assessment tasks. Among the different indicators, the highest mean was for using AI to create assessments such as quizzes, tests, and activities, suggesting that preservice teachers are more comfortable using AI for assessment preparation. However, the indicators for using AI to provide feedback and to track students' progress were rated as rare, indicating that preservice teachers are less likely to use AI for tasks requiring professional judgment and a personalized approach to student needs.

These results imply that preservice teachers primarily see AI as a tool to support the creation of assessment materials, rather than for handling more sensitive and evaluative aspects of teaching and feedback. This finding aligns with the finding that preservice teachers are cautious about using AI for feedback tasks (Erdem Coşgun, 2025) [19]. While they acknowledge its usefulness in generating assessment content, they still consider teacher judgment crucial in evaluating student performance and providing meaningful feedback. Thus, AI is viewed as a support tool for developing quizzes, tests, and other materials, rather than a replacement for teachers in the more personal and judgment-based aspects of teaching.

To break down, the results of general and curriculum autonomy consistently demonstrate that preservice teachers maintain strong control over how AI is selected, aligned with the objectives, and integrated into classroom activities and practices. Subsequently, the data revealed on the influence of AI-based lesson planning and preparation and instructional delivery to the preservice teachers' autonomy highlights that they are cautious about its tendency to polarize their autonomy when they allow themselves to fully depend on the planning and preparation for every discussion, implying that they are more comfortable with teacher-controlled AI use. Additionally, preservice teachers manifest cautiousness in AI utilization in the creation of assessment and feedback for the learners, suggesting that they know how to differentiate between technical or preparatory tasks, where AI can save time and provide assistance, and judgment-intensive tasks, where fairness, personalization, interpretation, and ethical responsibilities are required.

Taking all findings into account, the data shows that preservice teachers are not merely users of Artificial Intelligence; rather, they are selective, self-regulating, and professionally conscious users of it. The dominant pattern across the results is that preservice teachers tend to accept AI when it functions as a supportive instructional resource, while also not allowing it to take over areas they perceive as part of the teacher's core professional authority. Thus, the central finding of the study is not simply that preservice teachers use AI moderately, but that they are actively constructing a model of AI use in which teacher autonomy remains primary and AI dependence remains secondary.

Challenges and Opportunities of Preservice Teachers in the Instructional Use of AI

Artificial Intelligence plays a pivotal role in societal and technological progress as it supports high-order skills (Esteban-Guitart & Gee, 2020) [22]. Despite the growing but still unsubstantiated concerns about AI, education continues to uphold academic integrity and quality. Inevitably, educators are among the people most affected by the surge of technology and artificial intelligence in society. This includes preservice teachers, who are still in the process of developing and refining their pedagogical and content

knowledge as they prepare to enter the teaching profession. With this in mind, it is imperative to understand where future educators stand in the advancement of artificial intelligence in education, particularly whether it affects their autonomy in selecting content and implementing pedagogical techniques as part of their role as teachers.

The preservice teachers participants (P) in this study shared their perceptions, experiences, and challenges regarding the instructional use of artificial intelligence, particularly in relation to how it influences their autonomy in the classroom and during instruction. The responses gathered reflected varied views on the ways AI affects teacher autonomy among these preservice teachers.

Theme 1: *Artificial Intelligence as an Accessible and Flexible Pedagogical Support Tool*

Artificial intelligence has increasingly become part of many areas of society, especially education. It has been found helpful in reducing teachers' workload by assisting in differentiated instruction and curriculum planning for lessons that require further study or research (Filiz, Kaya, & Adiguzel, 2025) [23]. At the same time, students today are also widely exposed to AI and its applications. However, despite its convenience and benefits for both teachers and students, debates remain over whether AI truly contributes positively to education or affects the quality of learning that teachers and students are expected to develop. Because of this, institutions must implement appropriate measures to ensure that AI remains aligned with educational development and goals (Rütti-Joy *et al*., 2024).

AI appears in different forms, such as machine learning, medical applications, and, most commonly, generative AI in education. Preservice teachers reported that AI saves time and improves the quality of lesson plans, particularly through idea generation, language support, and lesson organization (Kerr & Kim, 2025) [35]. Likewise, preservice teachers viewed ChatGPT as a tool that improves educational effectiveness and expands accessibility in distributed learning (Karataş & Yüce, 2024) [34]. Similarly, preservice teachers positioned AI as a tool to support teaching (Guan *et al*., 2025) [28]. As one participant shared:

> *"AI helps me save time in making lesson plans, activities, and assessments, and it gives me new ideas for teaching."* (P3)

This implies that AI is indeed helpful for preservice teachers who are applying what they've learned into teaching practice. Another preservice teacher stated that:

> *"It gives me more ideas, examples, and resources that I can use to make my lessons more engaging and effective."* (P9)

Moreover, AI has been shown to provide greater accessibility within the educational landscape. Clear differences can be observed between the period before the rise of AI in education and the present, particularly in how information and educational materials can now be accessed, generated, and explored through AI. One of the applications of AI for preservice teachers is that it provides access to global knowledge, which in turn deepens their understanding of other cultures and supports inclusive learning (Kalniņa *et al*., 2024) [33]. Apart from the access to global knowledge, generative AI has also become a tool to create personalized learning materials for each student by providing access to different media of materials for learning, like images, texts, and exercises, to match the learners' needs to learn effectively (Jauhiainen & Guerra, 2024) [32]. As one participant asserted:

> *"AI has the potential to enhance creativity by offering new tools, resources, and ideas that teachers may not have considered. It can provide inspiration, suggest alternative methods, and analyze student responses to adjust teaching strategies."* (P4)

This situation implies that preservice teachers in this technological era have sufficient resources and access in terms of maximizing AI, especially generative AI, in the educational context, such as for pedagogical support in their teaching. Another teacher said:

> *"It enhances creativity by giving ideas for lesson plans, activities, and teaching strategies that you might not have thought of on your own, and it helps you make faster, more informed decisions."* (P6)

The variety of teaching approaches is imperative, as it not only enhances students' learning but also provides an avenue for preservice teachers to genuinely practice teaching in ways that matter most to their students' educational and personal growth. Through the utilization of artificial intelligence, preservice teachers are able to maximize their instructional content to address the diverse learning needs of students. Hence, the participants clearly favor AI as an accessible and flexible pedagogical support tool.

Theme 2: *Artificial Intelligence as an efficient and supportive supplementary education tool*

The emergence of artificial intelligence has bridged the gap between conventional classroom instruction and the growing demand for accessible, efficient, and supportive learning tools. It holds great potential to improve teaching-learning experiences and student performance outcomes (Filiz *et al*., 2025) [23]. In this context, AI has become a valuable support in responding to the evolving needs of both teachers and learners. Specifically, AI tools are considered beneficial in designing and planning lessons that cater to students' needs. AI also serves as an efficient and supportive supplementary tool for teachers by providing relevant resources, explanations, and feedback. However, despite the promise of AI tools, there remains a need to examine whether AI truly functions as a supportive tool that supplements learning or whether it is gradually replacing the teacher's role in empowering students and making learning more meaningful (Xu *et al*., 2025). Hence, it is empirical to explore the extent to which AI serves as a tool for instructional support while preserving the essential role of teachers in facilitating meaningful learning.

Artificial intelligence in the field of education highlights the role of teachers as a crucial component in the learning process. These tools augment their function as a facilitator of learning and instead of replacing them. Preservice teachers claimed that generative chatbots has the potential to contribute to teaching in terms of lesson planning, preparation, presentation, and formative assessment (Jere *et*

al., 2024). Similar findings were reported when preservice teachers asserted that they used generative AI tools for topic selection, lesson organization, and grammar accuracy (Kerr & Kim, 2025) [35]. A participant stated:

> *"I perceive it as a tool to assist but not a replacement for teachers. It makes teaching and learning faster, convenient and easier."* (P3)

This explains that AI should be treated as a complement to teachers' role in facilitating learning, not a replacement. Teachers remain essential because meaningful learning still depends on their pedagogical judgment and ability to cater to students' needs. A participant said:

> *"It helps me understand hard topics and gives me quick ideas when I'm stuck."* (P12)

Another promising factor of artificial intelligence tools that has gained attention is their ability to provide constant and time-saving access to idea generation, teaching strategies, and feedback. In language teaching and learning, AI tools can be used to generate lesson plan materials, classroom activities, and even images and videos, which allow preservice teachers to strengthen classroom management and improve learning outcomes. Preservice teachers reported that AI tools such as ChatGPT helped them simplify language and provide scaffolds, making complex content easier for learners to understand (Sutcliffe *et al*., 2026). In parallel findings, AI was also reported to be used as an aid in preparing materials for differentiated classes and generating interactive activities, allowing teachers to better address diverse student needs and promote more engaging learning experiences (Kılıçkaya & Kic-Drgas, 2025) [38]. A preservice teacher shared:

> *"It gives me more ideas, examples, and resources that I can use to make my lessons more engaging and effective."* (P9)

The goal of teaching is to promote student learning. As AI is increasingly understood as a tool that supports meaningful learning, teachers are empowered to go beyond conventional approaches to instruction. Although artificial intelligence continues to be explored for its wide range of applications in teaching, it should not be seen as a reason to disregard the true value of human guidance, which only teachers can provide.

Theme 3: *Pedagogical Constraints in Use of AI for Instruction*

There remains an ongoing debate as to whether granting greater freedom in the use of AI in classrooms is more beneficial than detrimental. In today's educational landscape, where preservice teachers are increasingly exposed to AI while still developing their content knowledge and pedagogical skills, this issue has become especially significant. While AI may function as a useful instructional tool or support mechanism, its growing use weakens preservice teachers' critical thinking, self-confidence, problem-solving, and creative thinking, undermining the importance of their own pedagogical understanding and contextual judgment (Zhang *et al*., 2025) [70]. Supporting this statement, a participant honestly stated:

> *"It affects my ability to think critically because AI makes me lazy, knowing that it can do the tasks faster and easier."* (P13)

At present, teachers view AI as a tool for innovation in teaching and learning (Zhai, 2025) [69]. However, other teachers emphasized their concerns that it may weaken their leadership skills by reducing professional autonomy by making them passive users of AI-driven methods and data rather than their own (Ghamrawi *et al*., 2024) [26]. This gap in the instructional use of AI has consistently proven that constraints from its misuse could be detrimental to one's progress, both mentally and professionally. As one preservice teacher mentioned:

> *"AI can limit teachers' capabilities to think critically, especially if they grow dependent of it."* (P16)

Albeit AI poses a threat to the critical thinking of these preservice teachers, instructional use of AI significantly lowers their workload and helps them determine which pedagogical and content approaches are most appropriate, especially in situations where they have limited ideas on what to do. For instance, preservice teachers use AI for topic selection, material creation, and lesson organization, which in turn improves efficiency and creativity in lesson planning (Kerr & Kim, 2025) [35]. Still, greater AI dependence is associated with lower critical thinking with cognitive fatigue partly mediating that relationship (Tian & Zhang *et al*., 2025) [62]. As one participant mentioned:

> *"AI tools can also help teachers develop innovative lesson plans and resources, enhancing engagement and student outcomes. On the flip side, AI's limitations might include an over-reliance on technology, potential biases in algorithms, and the challenge of maintaining human connection in the learning process."* (P4)

Importantly, as future educators, preservice teachers continuously develop their pedagogical skills through the knowledge they acquire from professional educators, undergraduate major courses, and teaching experiences, especially during their teaching internship. One factor that makes teaching challenging is the teacher's ability to sustain human connection and understanding throughout the learning process. Teaching is not merely the delivery of content; it also involves building meaningful relationships with students and providing emotional support so that they feel valued and cared for in the classroom. Indeed, when learners perceive their teachers as caring and nurturing, they feel more connected to the learning environment and are more motivated to participate in the learning process (Schimmelpfennig, 2025) [57].

Nevertheless, despite the benefits AI offers to teachers, it may also threaten the human connection within the classroom. Teachers are given the freedom to choose and apply teaching practices based on their professional training and judgment. In this sense, teacher autonomy plays a vital role in fostering student–teacher connection. It enables teachers to make flexible instructional decisions based on students' characteristics and readiness levels, select methods appropriate to learners' needs, and make more constructive decisions for student learning (Ertürk, 2023) [21]. Similarly,

in assessment, teacher autonomy supports student learning by allowing teachers to tailor assessment practices to the needs of individual students (Ketonen & Nieminen, 2025) [36]. However, due to increasing dependence on instructional AI, these ideas have become more polarized, as some educators, including preservice teachers, perceive AI as something that neither fosters nor values human relationships. Here are some responses from the participants:

> *"I know that it can limit me if I just copy everything without thinking. As a future teacher, I still want my lessons to reflect my own effort and understanding, so I make sure to add my personal touch."* (P7)
> *"AI saves a lot of time by creating lesson ideas quickly, but it can sometimes make mistakes or miss the "human touch" that students need."* (P15)

These statements are crucial, supporting the statement that preservice teachers and teacher educators should be cautious about the influences of AI in the relationship-building between them and the students.

Theme 4: *Ethical Reliability Setbacks of the Instructional Use of AI*

In the era of Education 4.0, teachers view artificial intelligence as a tool that can enhance the success of learning. Its integration into teaching is considered beneficial because it improves access to information and serves as an efficient tool that supplements traditional teaching practices (Filiz *et al*., 2025) [23]. However, skepticism remains regarding the effective and responsible use of generative AI, especially given the rapid growth and accessibility of this technology. Thus, it is important to discuss its use carefully, as the uncontrolled use of AI may lead to detrimental effects on learning quality, teacher autonomy, and the development of students' critical thinking.

Educators claimed that they face constraints when using artificial intelligence due to concerns about its ethical reliability and the need to evaluate and sift through legitimate information. Similarly, teachers worry that AI may reduce their leadership in the classroom. They fear that it may lessen their freedom to make professional decisions, limit their role in collaborating with others when making instructional choices, and turn them into followers of AI systems instead of active leaders in teaching (Ghamrawi, Shal, & Ghamrawi, 2024) [26]. Additionally, data privacy and educational inequality were reported as challenges of artificial intelligence in education (Alfredo *et al*., 2024). A participant expressed:

> *"It requires careful implementation to address data privacy, equity, and academic integrity."* (P16)

This delineates that albeit artificial intelligence can be useful in teaching. It must be utilized responsibly and with clear limitations. It also underpins that constraints like data privacy and academic integrity should not be disregarded to ensure the proper use of generative AI.

> *"There are problems with possible overreliance, not being sensitive to context, and worries about accuracy and academic integrity."* (P12)

As technological advancements have made a plethora of information accessible online, there is an increasing need to understand the importance of literacy. Artificial intelligence tools have made it easier for teachers to look for ideas related to instruction without consuming much time. Most teachers use AI to save time, but the dilemma now lies in how information can be considered fully reliable and accurate when teachers do not always have enough time to validate it. Preservice teachers viewed information accuracy as a real challenge, which shows that even future teachers recognize that AI outputs cannot always be treated as fully reliable (Yüce, 2024). In terms of academic integrity and honesty, written assessments such as essays are often vulnerable to plagiarism, which compromises the authenticity of students' work. Therefore, teachers must first practice integrity themselves so that they can effectively reinforce it among their students. Another participant noted:

> *"In using AI in education, it is also influenced by ethical considerations, such as ensuring accuracy, protecting student data, and maintaining appropriate teacher control over instruction."* (P15)

Although artificial intelligence offers numerous benefits in education, these advantages are also accompanied by dilemmas concerning ethical use, data privacy, and information accuracy, all of which educators must understand critically. Given how easily information can now be accessed and disseminated, teachers' autonomy becomes even more important in evaluating, filtering, and deciding how such information should be used in instruction. It is therefore imperative to ensure that students are provided with accurate information and are taught to use AI responsibly. Only through proper guidance and teacher autonomy can AI contribute to a more meaningful, ethical, and effective learning experience.

Given that the findings reveal that preservice teachers demonstrate high autonomy in the instructional use of artificial intelligence, while also perceiving AI as a support tool in lesson planning, instructional delivery, assessment, and feedback, the knowledge generated from this study may serve as a basis for the development of a guidebook on the proper integration of AI in instruction. Such a guidebook may help preservice teachers exercise their autonomy in a responsible and pedagogically sound manner by providing clear guidance on when, why, and how AI can be used effectively in the classroom. Notably, it may support them in integrating AI without diminishing their critical thinking, professional judgement, and decision-making in the teaching and learning process. In this manner, the guidebook may also contribute to bettering learners' understanding by allowing that AI integration in the instruction remains contextualized, purposeful, and responsive to students' needs.

5. Summary of Findings, Conclusion, and Recommendations

In this study, the influence of the instructional use of artificial intelligence on preservice teachers' autonomy was examined. The data presented in the previous section were gathered from preservice teachers enrolled in different teacher education degree programs at a state university in Cebu City. Based on the findings, the researchers conclude that preservice teachers demonstrate a high level of both

general and curriculum autonomy. This indicates that they remain in control when selecting, aligning, and integrating AI tools according to their instructional goals and classroom needs. Their use of AI in actual classroom practice is moderate and selective rather than passive or indiscriminate. Specifically, they sometimes use AI in lesson planning and preparation, often use it in instructional delivery, and sometimes use it in assessment and feedback. These findings suggest that preservice teachers do not view AI as a substitute for teaching, but rather as a support tool that assists them while leaving major professional decisions under their control.

Moreover, the findings revealed that preservice teachers maintain primary control over the use of AI in instruction, as reflected in their high levels of general and curriculum autonomy. This implies that they exercise professional judgment in deciding when and how AI should be used in the teaching and learning process.

In addition, the data showed that preservice teachers use AI with caution in their instruction. Their selective use of AI across lesson planning, instructional delivery, and assessment suggests an awareness of both its potential benefits and its limitations. This indicates that the way they integrate AI into the classroom reflects a balanced recognition of its capabilities as well as the risks of relying on it too heavily in various dimensions of teaching and learning.

Furthermore, the thematized qualitative data highlighted the importance of AI awareness in education. As preservice teachers, the participants viewed AI mainly as a support and pedagogical tool that can help address certain instructional needs when necessary. This implies that although they recognize the value of AI integration in instruction, they still consider themselves the primary decision-makers in determining what should be included in the teaching process.

Despite the significance of AI in instruction, the findings also revealed that preservice teachers recognize its potential negative effects on critical thinking when users become overly dependent on its ability to provide immediate, convenient, and accessible answers. They also perceive AI as a factor that may compromise academic integrity and honesty when there is excessive reliance on AI-generated content. This indicates that preservice teachers are well aware of both the opportunities and the challenges that AI presents in instructional practice. Hence, there is a need for them to remain diligent, cautious, and critical when evaluating information generated by AI before incorporating it into their instruction.

Taken together, the findings reveal that preservice teachers are not passive users of AI. Rather, they are selective, self-regulating, and professionally conscious users who accept AI when it supports instruction and reject it when it does not align with their educational goals and professional judgment. Thus, the study affirms that preservice teachers are actively incorporating and shaping the instructional use of AI, with teacher autonomy remaining primary and AI dependence remaining secondary.

Recommendations

The researchers acknowledged that the study is limited to exploring the perspectives of preservice teachers regarding their level of autonomy in the instructional use of artificial intelligence. Based on the findings of the study, the following recommendations are made:

1. For the findings associated with the frequency of preservice teachers' autonomy in terms of general autonomy and curriculum autonomy, the next researchers may consider extending the target population to another school or institution with all degree programs to increase the sample size and obtain more comprehensive responses on preservice teachers' autonomy in the instructional use of AI.
2. For the findings associated with lesson planning and preparation, instructional delivery, and assessment and feedback, future studies may involve a larger sample size and include respondents from different institutions with all degree programs, which may help generate more comprehensive findings and strengthen comparisons across degree programs.
3. For the challenges and opportunities, future researchers may gather a larger number of participants for one-on-one interviews. One-on-one interviews may elicit real-time and authentic responses and may provide rich and varied insights encountered by preservice teachers.
4. The proposed output is an instructional guidebook on the use of AI for preservice teachers. The guidebook encapsulates guidelines on the responsible and ethical use of AI in the classroom, strategies on how to integrate AI in lesson planning and preparation, assessment and feedback, and practical applications that may help preservice teachers become more guided in using AI while strengthening their autonomy in instructional practice.

The recommendations are made in the hope of further exploring the experiences of preservice teachers in terms of their autonomy in using AI in instruction. As early as their practice teaching, they may develop the understanding that their experiences are important and that they can learn from these experiences to create a space for effective and meaningful learning in the future.

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