

Pedagogic Adaptation of Teachers in Utilizing Artificial Intelligence as a Learning Partner at Senior High School

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ABSTRACT

The development of artificial intelligence technology or Artificial Intelligence (AI) as a learning partner holds great potential in changing the modern educational landscape. However, the existing literature so far tends to focus on the technical functional aspect alone, leaving a significant research gap related to the absence of in-depth studies on the subjective dimension, inner struggle, and the essence of educators' awareness in operating the technology in real classrooms. This research is designed to explore the structure of pure teacher consciousness when integrating AI as a collaborative partner at SMAS Budisatrya Medan. By applying a qualitative method based on Edmund Husserl's transcendental phenomenological analysis knife, data collection was carried out through non-participant observation, documentation studies, and in-depth interviews with ten teachers as key informants. The findings of this research that dissect the correlation between noema and noesis show that the use of AI presents a new reality in the form of ease of exploration of learning models, acceleration of search for specific materials, and the realization of an interactive digital classroom ecosystem. Essentially, this study concludes that AI is positioned as a collaboration partner that streamlines instructional tasks without reducing the professional authority of educators. The contribution of these findings enriches the theoretical discourse on the importance of integrating digital technology that remains centered on the autonomy and professionalism of teachers.

Keywords: *Pedagogic Adaptation, Artificial Intelligence, Transcendental Phenomenology, Learning Partner, Teacher Professionalism*

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INTRODUCTION

Today's global civilization landscape is increasingly characterized by a wave of digital disruption driven by the rapid development of artificial intelligence (AI), particularly in the field of education. AI is no longer positioned merely as a technological instrument for improving administrative efficiency, but has increasingly entered the core of pedagogical and instructional practices. The transformation of teachers' work through digital technology reflects a broader change in the meaning of educational practice, in which educators are expected to continuously adapt to new technological environments. As Fullan (2007) argues, educational change requires individuals within educational institutions to continuously negotiate new practices and respond to transformations in their professional environments. In this context, the development of AI represents one of the most significant technological changes that teachers currently encounter.

The emergence of generative AI has further accelerated this transformation. Platforms such as ChatGPT, Gemini, and Copilot are equipped with advanced language-processing capabilities that enable users to generate texts, ideas, instructional materials, and alternative solutions within a relatively short period. For teachers, these technologies can support the preparation of teaching materials, the development of learning activities, and the exploration of different instructional strategies. Anwar (2024) explains that the introduction of AI has become increasingly relevant to improving teachers' competencies in responding to digital transformation. Similarly, Trianggara et al. (2024) emphasize that AI can be utilized as a

supporting technology in education when it is integrated appropriately into the learning process. Therefore, the development of generative AI has gradually shifted the position of educational technology from a static instructional aid toward a more interactive technological partner.

This transformation, however, does not simply produce technological advantages. It also generates pedagogical and ethical challenges that teachers must negotiate in their daily professional practices. The use of AI may provide efficiency and facilitate access to information, but excessive dependence on automatically generated information can raise concerns regarding academic integrity, originality, critical thinking, and the authenticity of students' learning processes. Rochim (2024) highlights that the use of AI in education involves risks and challenges that require responsible and wise utilization. From an ethical perspective, (Pulungan, 2024) also points out that the presence of AI raises philosophical questions concerning educational ethics and morality. Consequently, teachers are confronted with a complex situation in which they must balance technological efficiency with the preservation of educational values, human interaction, and students' intellectual independence.

Within this changing educational landscape, the role of teachers is also undergoing significant transformation. Rather than functioning solely as transmitters of knowledge, teachers increasingly need to act as facilitators who guide students in interacting critically with digital information and technological resources. Rahma et al. (2025) describe this transformation as a shift in the teacher's role from conventional teaching toward becoming a digital facilitator. This change requires teachers not only to develop technological competence but also to reconsider their professional identity and pedagogical authority. (Hadi et al., 2025) similarly emphasize the importance of human-machine collaboration in education, suggesting that AI should support rather than replace the professional role of teachers. Thus, teachers' experiences with AI cannot be understood merely through their ability to operate technological applications; they must also be examined through the meanings they attach to these technological changes.

The dynamics of technological adoption can be observed in the educational environment of SMAS Budisatrya Medan. As a private secondary school located in an urban environment with relatively broad access to digital technology, teachers encounter various opportunities to integrate AI into their instructional activities. Generative AI can be used to assist teachers in preparing teaching modules, developing alternative classroom strategies, and generating learning materials. At the same time, digital learning platforms and interactive technologies can be incorporated to stimulate students' attention and participation. (Rosita et al., 2024) demonstrate that training in AI tools can support teachers in both teaching and administrative activities, while (Nurhayati et al., 2024) show the potential integration of AI into collaborative learning. These developments provide an important contextual background for understanding how teachers at SMAS Budisatrya Medan experience, interpret, and negotiate the presence of AI in their everyday teaching practices.

However, the adoption of AI among teachers is unlikely to occur in a uniform manner. Differences in professional background, technological familiarity, teaching experience, and individual perceptions may shape how educators respond to AI. Some teachers may perceive AI as an opportunity to reduce administrative burdens and expand their pedagogical resources, whereas others may approach it cautiously because of concerns regarding plagiarism, student dependency, and the reduction of authentic human interaction. (Harnawati & Hidayati, 2024), for example, demonstrate that perceptions toward AI in educational contexts are an important dimension in understanding its acceptance and utilization. Likewise, (Tuningsih & Wahyuningsih, 2025) focus on teachers' experiences in using AI in elementary education, indicating that teachers' actual experiences provide important insights into how AI is interpreted and implemented in educational practice. Therefore, differences in teachers' lived experiences need to be explored rather than reduced to simple measurements of technological competence or acceptance.

Despite the increasing number of studies concerning AI and education, the complexity of teachers' lived experiences, particularly among educators in private secondary schools,

remains insufficiently explored. Much of the existing literature emphasizes the functional dimensions of AI, including technological utilization, teacher training, digital competence, and instructional effectiveness. For instance, (Hadi et al., 2025) discuss teacher adaptation through human-machine collaboration, while (Rosita et al., 2024) examine AI training to support teaching and administrative activities. Although such studies provide valuable information about the practical benefits of AI, they do not necessarily reveal how teachers personally experience, interpret, and give meaning to the presence of AI in their professional lives. In addition, quantitative approaches may identify patterns of perception or readiness but may not adequately capture the deeper consciousness, emotions, concerns, and meanings underlying teachers' adaptation. As Herlambang (2018) emphasizes, teachers' professional roles are closely related to pedagogical dimensions that involve not only technical competence but also the way educators understand their professional responsibilities.

For this reason, the present study employs Edmund Husserl's transcendental phenomenological perspective to investigate teachers' lived experiences in adapting to AI at SMAS Budisatrya Medan. Husserl's phenomenological framework provides an opportunity to explore experience from the perspective of consciousness and to identify the essential meaning underlying a phenomenon. Husserl (1983) emphasizes the importance of returning to experience itself and examining how phenomena are constituted within consciousness. In this study, teachers' experiences of using AI become the phenomenon to be explored through the relationship between noema, referring to what is experienced or intended as the object of consciousness, and noesis, referring to the act or process of consciousness through which the experience is constituted. Through epoché or bracketing, the researcher seeks to suspend preconceived assumptions concerning AI and teachers' adaptation so that the phenomenon can be understood from the teachers' own perspectives. Supported by the qualitative analytical procedures of (Miles et al., 2014), this phenomenological approach is expected to reveal the essential meaning of teachers' adaptation to AI, including how they negotiate technological efficiency, professional identity, ethical concerns, pedagogical responsibility, and the preservation of humanistic values in education.

METHOD

This study uses a qualitative methodological framework designed in depth to dissect the subjective reality in the field. In order to meet the stringent quality standards of scientific publications, the entire research procedure is comprehensively described into the following specific subsections.

Research Design

The design of this research implements the transcendental phenomenological approach pioneered by Edmund Husserl. The fundamental reason for choosing Husserl's school of phenomenology is not simply to set a mere methodological label, but is based on its philosophical conformity with the main goal of the research, which is to find the pure essence of *the lived experience* of educators. Through the usual positivistic or quantitative tradition, the complexity of the struggle of human consciousness is often reduced to statistical figures. On the other hand, Husserl's phenomenology allows researchers to trace the internal structure of the subject's consciousness authentically through the interweaving of the correlation between the noema component (the material object of the integration of AI that teachers face in school) and the noesis component (the reflective action of the teacher's consciousness in interpreting the technology). This investigation was centered at SMAS Budisatrya Medan located at Jalan Letda Sujono Number 166, Medan City, North Sumatra, with the consideration that this institution has become a space for active adaptation of the use of various smart platforms in daily teaching activities.

Respondents

The determination of the information subject in this research is carried out through purposive *sampling* techniques. The main criteria for key informants include the status of activity as a teacher at SMAS Budisatrya which empirically applies *the Artificial Intelligence* (AI) platform to support the stages of planning, implementation, and evaluation of learning. Based on these limitations, ten teachers across fields of study were selected which include the subjects of Biology, Geography, Chemistry, Informatics, Indonesian Language, Cultural Arts, English, Mathematics, Sociology, and Physical Education. The involvement of a variety of disciplines and diverse work spans aims to capture a rich, comprehensive, and in-depth data spectrum regarding the various patterns of teachers' experiences when interacting with digital technology.

Instruments

The position of the researcher in this phenomenological study acts as the main instrument (*human instrument*) that directly manages data collection in the field. In order to secure the validity of the information, the supporting instruments used include semi-structured interview *guides* and class observation checklists. The interview guidelines are designed flexibly to explore the history of technology adoption, the first impressions of operating generative AI such as *ChatGPT* and *Gemini*, to teachers' subjective views on the position of AI in the classroom ecosystem. Meanwhile, the observation sheet was directed to record material evidence of the use of gadgets, digital interaction patterns between teachers and students, and the operation of interactive media such as *ClassPoint* and *Quizizz* directly. The entire dialogue process was also documented using digital voice recorders and *field notes*.

Procedures

The series of primary data collection in the field was carried out in the range of March to April 2026. The investigation stage was opened with non-participant observation in the classroom to naturally record the expression and use of AI-based digital media by informants in front of students. The next step was followed by an in-depth *face-to-face* interview session with ten teacher informants with a duration ranging from 10 to 30 minutes per session. Throughout the communication process, researchers consistently applied the principle of *epoché* (or bracketing), which is to temporarily suspend all forms of personal assumptions, theoretical prejudices, and cognitive biases so that the phenomenon being studied can be captured as it is directly based on the informant's pure narrative. This procedure ended with the collection of educational document artifacts in the form of digital teaching module designs, *copies of ClassPoint* presentations, and AI-curated student worksheets.

Data Analysis

The data analysis integrates the interactive models of Miles, Huberman, and Saldaña with the stages of Husserl's phenomenological analysis. This process begins with data reduction through verbatim transcription of voice recordings, which is passed on to the horisonalization stage to sort out *the significant statements* from the teachers. These units of meaning are then categorized into clusters of textural themes (*noema*) and structural themes (*noesis*). The next stage involves the presentation of data (data display) in a chronological narrative that is reinforced by direct quotes from informants. The analysis was closed with the drawing of conclusions through eidetic reduction in order to extract the pure essence (*invariant essence*) from the teacher's overall life experience. The scientific validity of this research was maintained through technical triangulation tests, source triangulation, cross-comparison of material artifacts, and reconfirmation of transcript results to informants through *the member check* mechanism.

FINDINGS AND DISCUSSION

Based on data horisonalization, non-participant observations in class, and in-depth interviews with ten teacher informants at SMAS Budisatrya Medan through Edmund Husserl's transcendental phenomenological analysis knife, it was revealed that the structure of pure consciousness (*noema-noesis*) was classified into three main domains of experience:

Reference Domains of Learning Models Through AI

Educators actively position high-level language algorithms such as *ChatGPT* and *Gemini* as digital *interlocutors* to develop differentiated learning strategies that are in line with the Independent Curriculum. Biology teachers, for example, use this platform to map out group game scenarios for complex material. Noesically, system recommendations are not adopted rawly, but are filtered through rational considerations and sociocultural contextualization of students. In essence, AI is interpreted as a *collaborative thinking partner* in the micro-curriculum planning phase without shifting the professional authority of teachers. Furthermore, the dialectical process that occurs between the material reality of the artificial intelligence system (*noema*) and the reflective action of the teacher's intentional awareness (*noesis*) shows that technology functions as an instrument of intellectual capacity expansion that enriches the horizon of teachers' cognitive creativity. Each instructional design that is produced always goes through ethical screening, substantial feasibility tests, and rigorous pedagogical validation to ensure that the essential values of learning are not eroded by machine automation, so that the professional autonomy of educators is maintained absolutely in the midst of the onslaught of digital modernity.

The Domain of Work Efficiency Through Access to Information

The integration of intelligent platforms has succeeded in reducing the time of searching for manual literature that is tiring. Teachers in highly abstract fields such as Chemistry and Mathematics are helped in formulating alternative explanations, real-case examples, and variations of exam questions instantly. In teachers' intentional awareness, this speed of access is interpreted as a significant increase in productivity. The operational impact, the reduction of administrative burden, provides more space and energy for teachers to build humanist interactions and an empathetic approach to students. This transformation empirically proves that digital efficiency does not necessarily create alienation or distance between educators and students, but rather redefines the work time management of the teacher profession. With the reduction of burdensome technical-administrative routines, educators have a much greater availability of time and energy to devote to essential aspects of teaching, such as psychosocial mentoring, character strengthening, moral value instilling, and in-depth personal coaching to students in the school environment.

Digital and Interactive Classroom Atmosphere Domain

Cross-disciplinary educators such as Geography and Sociology combine AI curated materials with interactive gamification platforms such as *Quizizz* and *ClassPoint*. Observations show a surge in students' cognitive and emotional engagement in real-time. Teachers tactically use this medium to turn the destructive potential of gadgets into a means of productive learning competition. This technology has proven to be effective in fostering intrinsic motivation and classroom enthusiasm, while confirming that the operation of an intelligent digital ecosystem is able to transform conventional classrooms into participatory, dynamic, and highly responsive learning environments to 21st-century challenges without sacrificing the essence of humanistic social interaction. In addition, this tactical strategy reflects the form of teachers' adaptive intelligence in dealing with the phenomenon of digital disruption among adolescents, where smartphones that were originally seen as a source of disruption and destructive distractions have been successfully revitalized into a pedagogical means that are competitive, healthy, and stimulate the active involvement of students throughout the knowledge transfer process.

Discussion

The radical shift in the position of *Artificial Intelligence* (AI) at SMAS Budisatrya from what was originally seen as a passive mechanical tool (*tools*) to a legitimate *learning partner* for educators makes a significant theoretical contribution to the contemporary educational technology discourse. This subjective interpretation finds a solid common ground with the conceptual framework initiated by (Linn & Hsi, 2000), who affirm that technological elements should act as interactive partners to facilitate the process of exploration, visualization, and integration of knowledge in a meaningful way both independently and collectively.

If placed on a map of the latest literature, the findings of this research sharply expand the academic edifice previously built by (Hadi et al., 2025; Rosita et al., 2024). Previous studies are still generally dominated by functional-macro approaches, such as evaluating the technical effectiveness of applications, calculating students' cognitive learning outcomes, or quantitative testing of teachers' digital readiness levels through incidental training programs. Such positivistic survey approaches often ignore the inner dimensions of the subjects. On the contrary, through the implementation of Edmund Husserl's transcendental phenomenological philosophy, this research succeeded in breaking down the limits of positivism by authentically dismantling the structure of internal consciousness (*noema-noesis*), thereby capturing the essence of the struggle for meaning experienced by teachers directly from their *lived experience*.

Furthermore, these findings enrich the perspective carried by Nurhayati et al., (2024); Ulimaz et al., (2024) regarding the urgency of harmonious collaboration between humans and machines in the era of disruption. In the midst of global concerns that intelligent automation will trigger the redundancy of the teaching profession or reduce the essence of pedagogy, the dynamics at SMAS Budisatrya actually prove the existence of a *very mature form of active adaptation*. Teachers are not trapped in an attitude of dogmatic rejection (*technophobia*) or unfiltered acceptance (*technophilia*), but rather conduct critical cognitive negotiations. They absorb the computational speed of AI as a form of extension of *capability*.

Viewed from the perspective of the sociology of education and the theory of social change put forward by Fullan (2007), the process of adopting technology at the private high school level is highly dependent on the readiness of the change agent at the forefront, namely the teacher himself. When educational institutions are faced with the pressures of modernity, teachers' ability to maintain professional autonomy becomes the main determinant so that digital innovation does not turn into an instrument of alienation. The findings of this research philosophically affirm that although AI offers massive operational efficiency, moral control, substantive assessment, and pedagogic direction remain under the authority of the teacher's professional consciousness as the main anchor of the classroom. Thus, this human-machine collaboration does not shift the dignity of humanity, but transforms educators into digital facilitators who are characterful, reflective, and humanitarian-oriented in the 21st century.

CONCLUSIONS

The lived experience of educators at SMAS Budisatrya in adopting artificial intelligence (AI) has transformed from viewing AI as a technical instrument to recognizing it as a learning partner. Through the relationship between noema and noesis, AI provides teachers with diverse instructional references, improves efficiency in preparing teaching materials, and stimulates students' active participation and cognitive engagement. The essence of pedagogical adaptation lies in teachers' critical reasoning to balance technological efficiency with humanistic educational responsibility. Teachers do not perceive AI as a threat to their profession but as a tool for extending their teaching capacity, while pedagogical decisions, substantive evaluation, and character development remain under professional teacher authority. Therefore, schools should establish clear AI-use policies, provide continuous training and assistance to strengthen teachers' digital competencies, and integrate AI literacy and ethics into school culture to prevent plagiarism, moral degradation, and excessive cognitive dependence.

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