

Transforming Learning in the Digital Age: Examining the Role of AI for Catholic Religious Education Teachers

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Abstract

This study aims to understand the perception and utilization of artificial intelligence (AI) by Catholic Religious Education teachers in learning, as well as identify factors that influence the effectiveness of using this technology. The role of AI in the era of technology 5.0 is not only as a tool, but also as a breakthrough that helps in designing innovative learning. However, many teachers still lack the ability to utilize AI appropriately. Based on this condition, it is necessary to conduct an in-depth study related to teachers' perceptions and their ability to utilize AI in learning, especially in Catholic religious education. A qualitative research method with a phenomenological approach was used to explore the experiences and views of teachers from various levels of tenure. Data were collected through semi-structured interviews, participatory observation, and documentation, then analyzed using thematic analysis techniques and data triangulation to increase the validity of the findings. The results show that there are variations in perceptions related to AI, where teachers with less than five years of service tend to be more open and actively use AI in learning, while teachers with more than 15 years of service show skepticism and limited use. The main influencing factors were technical skills and anxiety related to changing teacher roles as well as the unsuitability of AI in conveying the spiritual and moral values of Catholicism. Training limitations and lack of in-depth understanding of AI were also significant barriers to its utilization. This study highlights the importance of continuous training that integrates technical aspects and religious values to improve teacher readiness. In addition, there is a need to develop AI content that is in line with Catholic teachings as well as learning approaches that emphasize the role of the teacher as a moral and spiritual guide. This research provides a basis for developing teacher professional development strategies and AI-based learning innovations that are aligned with the values of faith in religious education.

Keywords: Artificial Intelligence; Catholic Education; Digital Learning; Teacher Perceptions; Technology Integration

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INTRODUCTION

The rapid development of the digital era has an impact on all lines of life, including the world of education (Laitsou et al., 2025). This cannot be separated from the central role of teachers as educators, who are a key element in the education

system. Teachers are not only teachers, but also agents of change in renewing and improving the quality of education (Kemendikbud, 2018). The success of education is influenced by various factors such as educators, students, subject matter, methods, goals, and the learning environment (Meling, 2022). Among these environmental factors, information technology (IT) is a dominant element that increasingly influences the perspective, strategy, and implementation of learning (Mak et al., 2023).

Information technology has presented a new paradigm known as e-life, which is an electronic-based lifestyle that includes e-education, e-library, e-journal, and so on (Aminah et al., 2020; Meepung et al., 2021). The speed of internet access provides extensive opportunities to access learning resources and expand the scope of education. However, infrastructure inequality is still a major challenge in various parts of Indonesia, especially in remote areas that have not been optimally reached by the internet. As a result, digital transformation in education has not been felt equally. Teachers as the main actors of this transformation are required to understand and be able to utilize technology appropriately (Pentucci & Laici, 2023).

One technology that is growing rapidly is artificial intelligence (AI). AI is designed to analyze data, solve problems, and provide computer processing-based action recommendations. The early development of AI dates back to the Dartmouth conference in 1956, and has now evolved through expert systems, machine learning, to generative AI such as ChatGPT and DALL-E. Modern AI is capable of automatically generating text, images, and code, and has been widely used in the business, finance, healthcare, and information technology sectors. However, its utilization in education—especially in learning design, material development, and assessment—is still relatively limited, especially in Indonesia.

A survey of teachers shows that there are still many educators who do not have the skills to utilize AI optimally to support the learning process. This is also the case for madrasah teachers, where limited competence in using the internet is still a fundamental problem (Giacumo, 2024). In the context of Catholic religious education teachers, this problem is even more pronounced. Based on assessment data of PPG Batch 1 Year 2025 student candidates, 23.2% of 487 teachers stated that they had limitations in using the internet and AI applications (PPG Batch 1 Year 2025 data). This indicates an urgent need to improve digital literacy among Catholic religious education teachers so that they can adapt to rapid technological developments.

Advances in digital technology have fundamentally changed the paradigm of education, including in the realm of religious education. One innovation that is becoming increasingly prominent is the use of artificial intelligence (AI) in education. In the context of Catholic religious education, the integration of AI is not merely a response to technological developments, but a pedagogical and pastoral necessity to maintain the relevance of faith education in a digitalized world. Pedagogically, AI has great potential to promote personalized, adaptive, and reflection-based learning. AI enables the adaptation of materials and approaches according to the needs and abilities of learners (Holmes, 2019). In religious education, this is particularly important given the diversity of students' spiritual backgrounds, levels of faith maturity, and learning styles. AI technology can also facilitate moral discussions and character formation through ethical simulations, natural language processing, and interactive dialogue platforms (Luckin et al., 2016).

From a theological perspective, the Catholic Church does not reject technological progress but encourages the faithful to use it wisely for the development of humanity. Pope (Fransiskus, 2019) emphasizes the importance of the Church's presence in the digital world to engage with the younger generation. AI, within this framework, can serve as a new tool for evangelization and a means to ground Christian values through approaches relevant to digital culture.

However, the use of AI in religious education is not without challenges. There are concerns that reliance on technology may shift the spiritual dimension to a mechanistic one. Therefore, researchers emphasize the importance of balancing the use of technology with a humanistic approach, as stated by Sun and Zhang (2015) and Alrassi et al. (2021), that technology should be directed to strengthen, not replace, the humanization process in education.

In the context of faith education, especially Catholic religious education, AI cannot be separated from theological and spiritual meanings. The advancement of AI technology reflects human intellectual potential as *imago Dei*-the image and likeness of God-which is intended to bring about the common good, including in realizing peace and justice (Muderedzwa, 2022). The Catholic Church views education not only as a cognitive process, but also as the formation of the whole person that includes spiritual, moral, and social dimensions (Congregation for Catholic Education, 2022). Therefore, the use of AI in faith education should be aligned with Catholic values that emphasize human dignity, personal relationships, and openness to transcendence.

Generative AI such as ChatGPT can be a helpful tool to structure teaching materials, provide automated feedback, and simplify the assessment process. The study by Risana et al. (2024) showed that the use of AI can increase the effectiveness and inclusiveness of education. In fact, AI-based automated evaluation in the study by Chiu et al. (2024) showed accuracy that is getting closer to human judgment. However, as noted by L. Wang (2024), the application of AI is not free from ethical challenges such as data bias, privacy violations, and the risk of information misuse. Thus, teachers are not only required to be able to operate technology, but also have ethical skills in dealing with it.

In the Catholic educational tradition, learning is dialogic, reflective, and community-based (Dell & Cottrell-Boyce, 2024). Technology-including AI-should support interpersonal relationships and build authentic faith relationships, not replace them. Faith education must remain heartfelt, bring meaning, and deepen learners' spirituality. Groome (2018) emphasizes that faith education is not only about knowledge transfer, but also the formation of a transformative Christian lifestyle. Thus, the integration of technology in Catholic religious education needs to be done selectively and reflectively so as not to lose its mystical dimension.

Existing research so far has mostly discussed the improvement of daily social or moral skills in Catholic religious education (Hartutik et al., 2023; Süt & Öznaçar, 2021). The lack of studies on teachers' deep understanding of technology, especially AI, is an important gap that needs to be bridged. Therefore, this study aims to determine the perceptions of Catholic religious education teachers towards the use of AI in learning, including the obstacles faced and the perceived benefits. This research is expected to be an initial contribution in designing strategies for training, mentoring, and capacity building for Catholic religious education teachers in facing the digital era wisely and meaningfully.

METHOD

Research Design

This research uses a qualitative approach with a phenomenological design to explore in depth how Catholic Religious Education teachers and students respond to and utilize artificial intelligence (AI) in the learning process. The phenomenological design was chosen to understand the meaning of subjective experiences experienced by teachers in the context of using AI technology, especially in Catholic Religious Education, which increasingly emphasizes values and spirituality (Creswell, 2014). In this study, particular attention was given to two central factors that influence AI integration in this subject area: teachers' skills in utilizing AI and their anxiety regarding its use. These dimensions emerged as significant in shaping how AI is perceived, adopted, and applied within religious learning contexts.

Participants and Sampling

The research subjects were Catholic Religious Education teachers who had used or were currently using AI in teaching at school, consisting of 82 teachers. The participants were selected using purposive sampling, a technique that identifies individuals with relevant, in-depth experiences who can provide rich information about the research focus (Merriam & Tisdell, 2016). The selection criteria required that teachers had experience in using AI-based applications in learning, and that students involved in the study were actively participating in AI-supported classroom processes.

Participants were drawn from different regions to reflect a diversity of geographical and technological contexts. To explore variations in skills and perceptions, teachers were grouped into four categories based on their period of service: less than 5 years, 5-10 years, 10-15 years, and more than 15 years. These categories were used to examine differences in AI understanding, the intensity of use, its application in learning, and attitudes toward AI.

Data Collection

The study used three main methods for data collection: interviews, observations, and document analysis. Semi-structured in-depth interviews were conducted with both teachers and students to explore their perceptions, understanding, and attitudes toward AI in the learning process. These interviews addressed topics such as the level of skills in using AI, perceived benefits, challenges in integration, and concerns about its impact on religious values. Participatory observations were conducted by directly observing the interactions between teachers, students, and AI in both offline and online classrooms. These observations focused on how AI tools were used in teaching, the types of learning activities supported by AI, and how religious and moral values were addressed in AI-mediated instruction. Document analysis was also conducted to review materials used in teaching, including AI-generated learning modules, school policies on technology use, and records of AI-based learning activities. These documents provided additional context and supported triangulation of findings from interviews and observations.

Research Instruments and Ethics

The instruments used in this study consisted of an interview guide, an observation sheet, and a document checklist. The interview guide was developed to

ensure that questions were relevant to the research focus on skills and anxiety in AI use, while the observation sheet was designed to systematically record classroom interactions and AI integration. The document checklist identified the types of instructional and policy documents to be reviewed. All instruments were validated through expert judgment to confirm their suitability for the research context. The study adhered to research ethics principles, including obtaining informed consent from participants, guaranteeing confidentiality, and respecting participants' right to withdraw at any point during the study (Miles et al., 2020).

Data Analysis

Data analysis followed a qualitative approach as described by Miles and Huberman, involving three concurrent stages: data reduction, data display, and conclusion drawing/verification. Data reduction involved selecting and organizing relevant portions of interview transcripts, observation notes, and documents. Data display involved arranging the organized data to identify patterns and thematic relationships. The conclusion drawing and verification stage focused on interpreting these patterns to develop a deeper understanding of the phenomenon under study.

Coding was conducted to identify and categorize the information into two main analytical dimensions: skills in utilizing AI and anxiety in the use of AI. The skills dimension captured the level of competence, ability to prepare materials, facilitate learning, and conduct assessments using AI. The anxiety dimension reflected concerns about the limitations of AI in conveying spiritual values, potential inconsistencies with Catholic doctrine, and fears that AI might diminish the teacher's role in guiding moral and faith-based formation. Figure 1 illustrates the process of linking data collection methods to the resulting themes. Interviews, observations, and document analysis each contributed evidence that was systematically coded and organized, leading to the identification of the two central themes.

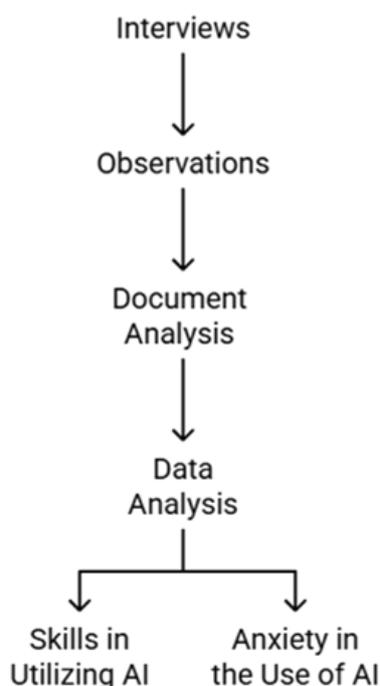


Figure 1. Data collection flows

Trustworthiness

To ensure the validity and reliability of the findings, multiple triangulation strategies were applied. Source triangulation involved collecting data from teachers, students, and documents. Method triangulation was achieved by using interviews, observations, and document analysis. Time triangulation was applied by conducting data collection at different times to assess consistency (Patton, 1999).

In addition, member checking was conducted by asking participants to review and provide feedback on the interpretations of their statements to ensure accuracy. This process helped verify that the meanings captured by the researcher truly reflected participants' experiences and perceptions (Lincoln & Guba, 1985).

RESULTS AND DISCUSSION

The results show that teachers' perceptions of the use of AI in Catholic religious learning are diverse. Most teachers see AI as a tool that can help in providing more interesting and interactive teaching materials. AI is considered capable of providing wider learning resources, allowing students to explore the material independently. The results of interviews with research subjects show that there are some differences in perceptions of the use of AI in the learning process. The resulting perceptions are influenced by several background conditions, namely skills in using AI in learning, and anxiety in the learning outcomes of religious education that are not achieved by using AI. Based on these aspects, a comprehensive description is as follows.

Skills in utilizing AI

The results show how the utilization of artificial intelligence (AI) in learning by Catholic Religious Education teachers and how the level of competence and skills in AI affect the effectiveness of its use. The results show that teachers who have an understanding and skills in AI are able to optimize this technology to improve the quality of religious learning, both in the preparation of materials, student assessment, and more interactive and contextual teaching. Teachers who are accustomed to using AI in learning are able to develop more interesting teaching materials, such as interactive videos, AI-based quizzes, and digital modules that are more adaptive to student needs. In addition, AI is also used to analyze student understanding and provide more personalized learning recommendations.

This pattern aligns with Shah and Wang's (2024) findings, which show that AI-enhanced instructional models – when supported by teacher competence – enable more adaptive learning flows and interactive feedback mechanisms. Their human-in-the-loop framework confirms that AI does not function effectively in isolation; rather, the teacher's role remains crucial in refining AI-generated outputs, curating appropriate materials, and applying them pedagogically within the classroom. Teachers who are confident in using AI tools are thus better positioned to enhance personalization, assessment, and learner engagement.

However, the study also found that teachers who do not keep up with the technology, especially senior teachers with minimal training in AI, tend to have difficulties in integrating AI into learning. Some of the main challenges faced by this group include a lack of technical skills, resistance to new teaching methods, and concerns about the validity of the information generated by AI in the context of religious teachings. These concerns are echoed by Papakostas (2025), who warns of the epistemological tensions between AI-generated content and theological doctrine.

The study emphasizes that uncritical use of AI—particularly by teachers unfamiliar with its limitations—can lead to content that may contradict core Christian anthropological principles or oversimplify religious narratives. In addition, limited training in AI utilization is also a major obstacle. Teachers who do not receive sufficient training are more likely to continue using traditional teaching methods, such as lectures and text discussions, without utilizing AI to support students' deeper understanding. This is consistent with Shah and Wang's observation that teachers without scaffolded support or exposure to AI tools are more likely to rely on habitual instructional approaches, thus missing the opportunity to implement more dynamic and data-informed pedagogies.

The data on the results of the teacher perception test related to the use of AI for Catholic religion teachers with the subject of Catholic religion teachers throughout Indonesia who participated in the PPG (Teacher Professional Education) program are shown in Table 1.

Table 1. Results of Teacher Perception Test

Period of Service (Years)	Understanding of AI	Intensity of AI Use	Utilization in learning	Perception of AI
< 5	High	High	Always	Positive (Open)
5-10	Medium	High	Sometimes	Positive (Open)
10-15	Low	Medium	Rare	Neutral
> 15	Low	Rare	Rare	Skeptical

This study reveals that teacher tenure has a significant influence on the understanding, intensity of use, and utilization of artificial intelligence (AI) in learning Catholic Religious Education. Teachers with shorter tenure (<5 years) tend to have a better understanding of AI and use it actively in learning. In contrast, teachers with longer tenure (>15 years) showed a lower level of understanding, rarely utilized AI, and had a more skeptical perception of this technology. Teachers with less than five years of service have a high understanding of AI because they have been more familiar with digital technology since their education. They more often utilize AI to develop interactive learning materials, create technology-based assessments, and provide a more personalized learning experience for students. In addition, they show a more positive and open attitude towards the utilization of AI, seeing it as a tool that can improve teaching effectiveness and assist in the analysis of student understanding (Luckin, 2017).

In contrast, teachers with more than 15 years of service tend to have a lower understanding of AI. This is due to limited access to training and the habit of using more conventional traditional teaching methods. They rarely use AI in teaching and rely more on lectures and text discussions. In addition, many of them are skeptical of AI, with major concerns related to the reliability of AI-generated information, the potential reduction of teachers' roles, and the challenges of adapting new methods (Selwyn, 2016). Teachers with 5-10 years and 10-15 years of service show varying trends in AI utilization. Teachers with 5-10 years of experience have a moderate understanding of AI and use it occasionally, depending on learning needs. They have

a relatively open attitude, but still experience some obstacles in technology integration. Meanwhile, teachers with 10-15 years of service have a low understanding, use AI in moderate intensity, and only occasionally apply it in learning. They tend to have a neutral attitude, not completely rejecting but also not actively adopting AI in the teaching process (Ertmer & Ottenbreit-Leftwich, 2010). The low ability of teachers with longer service in using AI is strongly influenced by their generally lower levels of digital literacy and limited exposure to evolving technologies. As shown by Filiz et al. (2025), while younger or less-experienced teachers embraced tools like ChatGPT and MagicSchool with enthusiasm, senior teachers expressed concerns over technological unfamiliarity and described difficulties adapting AI-generated materials to their established teaching routines. This aligns with the findings of Pei et al. (2025), where confidence and comfort with AI were significantly lower among participants who lacked deep understanding of AI mechanisms—even when they possessed general conceptual knowledge. The discomfort stems not just from a skills gap, but from a form of technopedagogical inertia—a reluctance to overhaul familiar instructional practices.

Laru et al. (2025) further support this, showing that fear of AI—though less influential than attitudes of usefulness—still contributes to resistance, particularly when the perceived ease of use is low. Their TAM-based model highlights that acceptance and technical understanding are interlinked, and both are often weaker in teachers who have not kept pace with digital innovations. In such cases, the transition to AI-supported instruction is experienced not as a pedagogical enhancement but as a disruption, requiring cognitive and procedural shifts in lesson planning, assessment, and classroom management. This helps explain why profound changes—such as integrating AI tools—trigger discomfort in more experienced educators: these shifts demand re-synchronization of long-established methods, materials, and evaluation techniques, placing cognitive load on teachers who may already feel that their existing approach has proven effective over time.

Based on these findings, it can be concluded that the effectiveness of AI utilization in education is greatly influenced by teachers' level of technological readiness and skills. To address this gap, continuous AI training is needed, especially for teachers with longer tenure who are not yet familiar with this technology. In addition, intergenerational mentoring programs can be a solution to accelerate skills transfer, where younger teachers can assist senior teachers in understanding and adapting AI into learning (Kofahi et al., 2025).

Anxiety in the Use of AI in Catholic Religious Learning

Anxiety in the use of AI is the concern that the use of AI can have a negative impact on the implementation of the learning process carried out in schools, especially in Catholic religious learning. Concerns arise due to students' dependence on technology as well as the limitations of AI in conveying spiritual values in depth. They emphasized that AI cannot replace the role of teachers in providing moral guidance and a more contextualized understanding of religious teachings. The interview results show that the anxiety arises due to the lack of understanding of teachers in the utilization of AI which is more relied on as a substitute learning tool, resulting in the perception that AI replaces the teacher in the process of delivering material, with

minimal strengthening of spiritual values and implementation in life. The results of an interview with one of the Catholic religion teachers are as follows.

P: Yes. So, have you ever tried to use AI in developing learning materials or assessments for students?

S: Not actively yet. I have tried to find references using AI, but I feel that AI only provides information in the form of general concepts without considering the religious values that I want to instill in students. That makes me hesitant to use it further.

P: Interesting. Do you think there are certain challenges that make you reluctant or less confident in using AI for learning Catholic Religious Education?

S: Yes, of course. One of my biggest concerns is how AI can integrate religious values in learning. AI can indeed provide quick and accurate answers academically, but I feel that it lacks the spiritual, moral and faith values that should be at the core of religious education. AI can only convey concepts, but it cannot replace deep reflection or guide students in understanding the religious meaning of the teachings given.

P: That's a very interesting point of view. So, in your opinion, AI cannot fully replace traditional learning methods in Catholic Religious Education?

*S: That's right. Religious education is not just about understanding concepts, but also about **instilling values, building character, and inviting students to reflect on their faith**. I worry that if AI is overused, learning becomes more informative but loses the essence of moral and spiritual formation.*

P: I understand the concern. Do you think there is a way that AI can be more effectively used in Catholic Religious Education without compromising religious values?

*S: It might be possible if AI is developed with more consideration **of religious values**. For example, AI could provide recommendations for materials that are in line with Church teachings or help in making faith reflection activities more contextualized. But still, in my opinion, the **role of the teacher cannot be fully replaced** because religious education really needs personal interaction and character building that cannot be done by machines.*

P: That's a very important point. To conclude, what is your attitude towards AI in education? Do you feel there is a need for special training so that teachers are better prepared to utilize it?

*S: I personally remain open to technological developments, including AI. But I feel that **teachers should be given special training** so that they can understand how to utilize AI wisely, without losing the essence of religious values in learning. If there is a training that is really designed to help us integrate AI well in religious learning, I would definitely be interested in attending it.*

The interview results show that there are doubts from teachers, especially in the use of AI in learning, but it was found that the doubts arose due to a lack of comprehensive understanding related to AI. This aligns with findings by Cho and Seo (2024) and Ronquillo et al. (2021), who highlight that limited exposure to AI-related educational programs significantly contributes to educators' anxiety and hesitancy toward AI adoption. Without sufficient foundational knowledge, many teachers feel uncertain about the implications and operational mechanisms of AI tools in pedagogy, which obstructs meaningful integration into classroom practices. This knowledge gap,

as Kim et al. (2025) and Adithyan et al. (2024) emphasize, is a key barrier that can only be addressed through comprehensive and targeted professional development.

In addition, teachers' doubts are related to the integration of AI, especially in Catholic religious learning. Given that religious learning does not only focus on the cognitive abilities obtained by students during the learning process, but also relates to attitudes and actions that result from understanding religious concepts, educators naturally question whether AI can support such depth. Literature by AlAli and Wardat (2024) and the report by (AI Research Group of the Centre for Digital Culture (2023) supports this concern, noting that religious educators are especially wary of whether AI can respect and embody values like human dignity, compassion, and community. These educators fear that algorithmic outputs, lacking emotional nuance and moral reasoning, may dilute or distort the ethical substance central to Catholic teachings (Lay, 2025).

So that religious learning, especially Catholicism, is not just knowing and understanding, but also must reach the applicative level of students' concrete actions. However, teachers' views related to AI remain largely confined to instrumental thinking, focused narrowly on automation or content delivery. This restricted view leads to anxiety and reduced initiative in integrating AI into values-based instruction. As Capinding and Dumayas (2024) argue, instrumental thinking about AI limits its use to transactional functions and overlooks its broader potential to facilitate critical thinking and holistic development. Similarly, Alshehri (2023) and Aisyah et al. (2024) warn that such perspectives hinder the use of AI to foster dialogical, ethically grounded learning environments. The lack of understanding, therefore, causes the integration of technology and learning to be hampered – not only technically but pedagogically, especially in contexts where human relationships and moral formation are essential. To move forward, Konyrova (2024) and Lee et al. (2024) underscore the need for professional development that expands educators' conceptual framing of AI, enabling them to utilize its capabilities in ways that support both intellectual and character development.

The utilization of Artificial Intelligence (AI) in Catholic Religious Education learning still faces significant challenges, especially in the aspect of teacher skills and readiness in using this technology. Catholic Religious Education teachers who have a high understanding of AI tend to be more active in using it as a tool in learning, such as in compiling digital teaching materials, creating AI-based assessments, or increasing student engagement in interactive discussions (Mayes & Freitas De, 2013) . However, for teachers who have a low understanding of technology, AI is still perceived as something complex and difficult to integrate into the teaching methods they have used for years (Ertmer & Ottenbreit-Leftwich, 2010) . Research data shows that teachers with less than five years of service have a high understanding and intensity of AI use, while teachers who have been teaching for more than fifteen years have a low understanding and rarely use AI in learning.

The limited availability of training is identified as a primary cause for the low skill levels of Catholic Religious Education teachers in leveraging artificial intelligence (AI). Research indicates that teachers who have participated in training programs tend to exhibit greater confidence and utilize AI more frequently in their teaching and learning processes. However, within many faith-based schools, AI training programs are still either scarce or not integrated as a standard component of teachers'

professional development. Consequently, a significant number of educators lack the necessary understanding of how to use AI effectively without compromising the moral and spiritual aspects central to Catholic Religious Education (Zawacki-Richter et al., 2019). Zawacki-Richter et al. (2019) also revealed a notable disparity in AI proficiency based on teaching experience. The majority of teachers with over a decade of teaching experience face difficulties in optimally utilizing AI, whereas younger teachers, who have received training, are more receptive to using AI to support their instruction. This suggests that adequate training is a critical factor in improving teacher readiness and capability, particularly for more senior educators, in integrating this new technology into the religious curriculum.

However, in many faith-based schools, AI training programs are still limited or not even part of teachers' professional development. As a result, many teachers do not understand how to use AI effectively without losing the moral and spiritual aspects of Catholic Religious Education (Selwyn, 2016). This study found that the majority of teachers who had more than ten years of teaching experience had difficulty in optimally utilizing AI, while younger teachers who had received training were more open to using AI to support learning.

In addition to skills, anxiety about AI is a major factor that hinders the utilization of this technology in Catholic Religious Education learning. Some teachers are concerned that AI cannot replace the role of humans in guiding students in aspects of faith and spirituality (Zhao et al., 2021). AI is considered only capable of presenting religious concepts technically but does not have the capacity to deeply instill Catholic values. Teachers with more than fifteen years of experience tend to be skeptical of the use of AI in learning, while teachers with less than five years of experience are more open and utilize this technology more often. This shows that the longer the tenure of a teacher, the higher the level of anxiety towards the use of AI in learning.

In addition, some Catholic Religious Education teachers also feel anxious that the use of AI can reduce their role in the learning process. They are concerned that the reliance on technology may shift the teacher's position as the main source of knowledge and guide in moral and spiritual aspects (Allcoat et al., 2021). In the context of Catholic Religious Education, the role of the teacher is not only to transfer knowledge, but also to shape students' character through a personalized and reflective approach. If AI is used without proper understanding, there is a risk that the learning process becomes more mechanical and loses the religious values that should be instilled. Therefore, teachers who do not have the skills in using AI tend to be more hesitant in using it and choose to continue using conventional methods in teaching Catholic teachings.

Another concern raised in this study is related to the accuracy of the information provided by AI. Catholic Religious Education teachers usually rely on authoritative and reliable religious sources in teaching, whereas AI works based on data taken from various sources, which may not always be in line with the teachings of the Catholic Church (L et al., 2019). This makes some teachers feel unsure whether AI can be safely used in religious learning. Teachers with more than ten years of experience are more likely to be skeptical of the information AI provides, while younger teachers are more critical in sorting out information relevant to Catholic teachings. Therefore, it is important for teachers to have a critical understanding of AI so that they can filter the information before using it in learning.

The results of this study show that teachers' skills and anxiety towards AI are the two main factors that influence the level of utilization of this technology in Catholic Religious Education. Teachers with high skills in AI are more likely to use this technology in learning, while teachers who lack skills and training are more skeptical and rarely utilize AI. To improve teachers' skills, training is needed that focuses not only on technical aspects but also on how to integrate AI with Catholic value-based approaches. Meanwhile, to overcome teachers' anxiety, it is necessary to understand that AI is not a substitute for them, but a tool that can improve the quality of learning. With the right strategy, AI can be optimally utilized without losing the essence of faith and value-based education in Catholic Religious Education.

CONCLUSION

Based on the discussion, it was found that teachers' perceptions of AI utilization in Catholic Religious Education are highly varied. The majority of teachers view AI as a beneficial tool that can provide more engaging and interactive learning materials, as well as broader learning resources, allowing students to explore content independently. However, these perceptual differences are significantly influenced by two main factors: teachers' skills in using AI and their anxiety regarding religious education learning outcomes that might not be achieved through its use.

In terms of skills, teachers with a good understanding and proficiency in AI are able to optimize this technology to enhance the quality of learning, including in material preparation, student assessment, and more interactive and contextual teaching. They can develop interactive videos, AI-based quizzes, and digital modules that are more adaptive to student needs. In contrast, senior teachers with minimal AI training tend to have difficulties integrating this technology into their teaching. The challenges they face include a lack of technical skills, resistance to new methods, and concerns about the validity of AI-generated information in the context of religious teachings. The limited availability of training is a major obstacle, leading teachers to continue using traditional methods like lectures and text discussions.

The study results show a strong correlation between teacher tenure and their understanding and utilization of AI. Teachers with less than five years of service have a high understanding of AI and use it actively with a positive and open attitude. Conversely, teachers with over 15 years of service have a low understanding, rarely use AI, and hold a more skeptical perception. This skepticism is driven by concerns about the reliability of AI-generated information, the potential reduction of the teacher's role, and the challenges of adapting to new methods. Low digital literacy and "technophobia" among senior teachers, who are comfortable with traditional methods, are cited as reasons for their low proficiency in using AI. Therefore, the effectiveness of AI use is heavily influenced by teachers' technological readiness and skills.

In addition to skills, anxiety about AI is another major inhibiting factor. Teachers are concerned that AI cannot replace their role in guiding students spiritually and morally. They argue that AI can only present concepts technically, without the capacity to deeply instill Catholic values. Concerns also arise regarding the potential for AI to diminish the teacher's role as the primary source of knowledge and moral guidance. There are also doubts about the accuracy of AI-provided information,

which may not align with Catholic Church teachings, making some teachers uncertain about using it in religious education.

Overall, the study concludes that teachers' skills and anxiety are the two main factors influencing the utilization of AI in Catholic Religious Education. Teachers with high skills are more likely to use AI, while those who lack skills and training are more skeptical and rarely use it. The solution lies in a thoughtful pedagogical approach, ethical safeguards, and institutional support, which would allow AI to become a meaningful partner in cultivating wisdom, virtue, and faithfulness in the digital age.

RECOMMENDATIONS

Based on the results and discussion of this study, there are several recommendations that can be used as a basis for further research. First, it is important to develop an AI-based TPACK (Technological Pedagogical Content Knowledge) training model specifically designed for Catholic Religious Education teachers. This model aims to improve teachers' readiness to integrate AI wisely and effectively in faith-based learning. Second, it is necessary to conduct a critical study of the theological validity of the content produced by AI, so that teachers have guidance in sorting and utilizing information that is in accordance with the official teachings of the Catholic Church. Third, longitudinal research on the transformation of teacher roles in the digital era needs to be conducted to understand how AI affects the relational, moral, and spiritual dimensions of learning interactions. Fourth, there is a need to develop a training module on the ethical use of AI for teachers, so that they are able to assist students in using technology responsibly and in line with Christian values. Fifth, classroom action research (PTK) is also recommended to examine how AI can be used as a tool in character building and internalization of the values of Christ's teachings through reflective and contextual learning activities. Finally, comparative studies between education levels and school types (public, private, and Catholic) need to be conducted to determine differences in teacher perceptions, readiness, and needs in utilizing AI, so that policy or training interventions can be tailored to the characteristics of each educational context.

Author Contributions

Hartutik: Conceptualization, methodology design, data collection, and primary manuscript drafting; Dani Kusuma: Supervision, project administration, funding acquisition, and manuscript review and editing; Stepanus Istoto Raharjo: Data analysis, interpretation of results, and contribution to manuscript writing; Dewi Ratna Jai: Literature review, data collection support, and editing of the manuscript; Irene Nindita Pradnya: Coordination of fieldwork, participant recruitment, and data management; Matilda Stella Pradnya: Assistance in data analysis, preparation of tables and figures, and manuscript formatting; Johanis Luturmas: Critical review of theoretical framework, validation of findings, and final approval of the manuscript. All authors have read and agreed to the published version of the manuscript.

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Conflict of interests

The authors declare no conflict of interest.

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