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The Use of Digital Technology in Christian Education: A Systematic Literature Review

Richard Fritzgerald Harsono[1]*, William Adi Santoso[1], Bernadeth Vindi Januarisca[2]
[1] Conservation Department, Faculty of Dentistry, Petra Christian University
[2] Oral Biology Department, Faculty of Dentistry, Petra Christian University
Siwalankerto 142-144, Surabaya 60236, Indonesia
e-mail : *richard.fritzgerald@petra.ac.id
*Corresponding author

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ABSTRACT

Digital technology offers opportunities to expand access, engagement, and flexibility in Christian education. However, its contribution to academic learning and Christian formation requires critical examination. This systematic literature review synthesizes research on digital technology in Christian education, focusing on technological applications, reported educational outcomes, teachers' roles, and implementation challenges. Searches of Google Scholar, GARUDA, and relevant educational journals identified ten articles published between 2020 and 2026 that met the inclusion criteria. Empirical and literature-based studies were analyzed using descriptive thematic synthesis. The reviewed literature reported benefits associated with e-learning platforms, Moodle, interactive media, audiovisual resources, and gamification, particularly for student motivation, participation, and access to learning materials. Nevertheless, differences in research designs and outcomes limit conclusions about effectiveness, especially regarding sustained academic achievement, character development, and spiritual formation. Successful integration depends on teacher competence, student readiness, infrastructure, and alignment with educational objectives. The synthesis highlights teachers' complementary responsibilities as academic and spiritual leaders. Technological pedagogical content knowledge provides a useful perspective for interpreting instructional integration, while Christian educational purposes require additional attention to faith, ethical reflection, and community. The distinctive emphasis lies in the purposes guiding technology use rather than the tools themselves. Digital technology should therefore support purposeful teaching and meaningful relationships, with further empirical research needed to evaluate its long-term academic and formative contributions.

INTRODUCTION

Digital technology has expanded the ways educators organize instruction, facilitate interaction, and provide access to learning resources. Learning management systems, audio-visual materials, interactive applications, and online discussion platforms offer opportunities to extend learning beyond the classroom. However, their educational value depends on how teachers connect technological possibilities with subject content, teaching strategies, and learners' needs. The technological pedagogical content knowledge (TPACK) framework explains this relationship by emphasizing the interaction of technological, pedagogical, and content knowledge (Mishra & Koehler, 2006). Although technology integration has generated extensive research, continuing questions about its conceptualization, implementation, and contribution to student learning indicate that access to digital tools alone is insufficient to ensure educational improvement (Schmid et al., 2024).

These questions are particularly relevant to Christian education, where academic learning is connected with explicitly Christian understandings of faith, character, and community. Chrismastianto et al. (2022) emphasize spiritual formation and biblical community as important dimensions of Christian educational practice. Accordingly, technology integration requires consideration of both instructional effectiveness and the formative purposes that guide teaching. In this review, *Christian education* refers to educational practice intentionally informed by Christian faith and directed toward academic and formative purposes. Christian Religious Education, including *Pendidikan Agama Kristen* as a school or university subject, represents a specific expression of this broader orientation. Much of the literature included in this review concerns this

subject-specific setting; its implications for Christian education across other disciplines therefore require contextual interpretation.

The distinctive character of Christian education should not be understood as implying that other educational settings disregard ethical development, relationships, or personal growth. Rather, the distinction examined here concerns the explicit Christian foundation through which educational purposes and practices are interpreted. For technology integration, this orientation raises questions about how digital resources support engagement with Christian teaching, ethical reflection, and participation in a learning community. It also requires attention to whether online activities encourage thoughtful relationships and responsible conduct. These considerations extend the evaluation of technology beyond convenience or frequency of use to its alignment with the educational institution's stated purposes.

Teachers have an important role in establishing this alignment. As academic leaders, they select credible content, design appropriate learning activities, facilitate inquiry, and assess students' understanding. Within Christian education, these responsibilities are accompanied by spiritual leadership expressed through the modelling of faith and the cultivation of a supportive community. Chrismastianto et al. (2022) identify teacher competence in spiritual formation and biblical community as an area requiring continuing professional development. Building on this perspective, the present review considers academic and spiritual leadership as complementary responsibilities when interpreting technology integration. Digital participation may create opportunities for reflection and interaction, but participation itself should not be treated as evidence of spiritual growth.

TPACK provides a useful framework for examining the instructional dimension of these responsibilities. Mishra and Koehler (2006) argue that meaningful technology integration involves understanding the relationships among what is taught, how it is taught, and the technologies used to support teaching. Applied to Christian education, this perspective directs attention to how teachers select digital tools that suit particular content and learning activities. An online discussion, for example, may support the interpretation of a biblical text when the teacher provides appropriate questions, credible resources, and constructive feedback. This is a proposed application of TPACK rather than evidence that the framework itself explains spiritual formation. In this review, excellence in technology integration is understood as the thoughtful alignment of academic rigor, appropriate pedagogy, accessible participation, and Christian educational purposes.

Existing reviews provide a foundation for examining these issues. Manuputty et al. (2025) discuss gamification in Christian Religious Education, reporting its potential to support motivation and participation while emphasizing the importance of planning and relevant content. Pulung et al. (2025) examine deep learning models in Christian Religious Education and discuss pedagogical opportunities alongside challenges associated with digital implementation. These contributions demonstrate that research in this area is developing. However, their focus on particular approaches leaves scope for a synthesis that considers different digital technologies together and examines their relationship with teachers' responsibilities and Christian educational purposes.

The research gap therefore concerns the integration and strength of the available evidence, rather than the complete absence of studies. The literature assembled for this review provides more discussion of motivation, engagement, and access than sustained evidence of academic achievement, character development, or spiritual formation. This limitation is consequential because an engaging digital activity does not necessarily produce deeper understanding or lasting formative outcomes. A broader synthesis is needed to distinguish reported educational benefits from proposed possibilities, examine the conditions supporting implementation, and identify outcomes that remain insufficiently investigated.

This study therefore systematically reviews literature on the use of digital technology in Christian education, with particular attention to the Christian religious instruction settings represented in the included studies. It addresses four research questions: (1) What digital technologies are used in the reviewed educational settings? (2) What contributions to learning and student outcomes are reported, and what limitations characterize the evidence? (3) How are teachers' academic and spiritual responsibilities addressed in technology integration? and (4) What pedagogical, technological, and contextual challenges influence implementation? Through this synthesis, the study aims to inform technology integration that is educationally sound, attentive to Christian formative purposes, and appropriately grounded in the available evidence.

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METHODOLOGY

Research Design

This study employed a systematic literature review to identify, examine, and synthesize research on the use of digital technology in Christian education. The review examined the technologies used, reported educational contributions, teachers' responsibilities, and implementation challenges. Christian education provided the overarching conceptual scope, while studies concerning Christian Religious Education as a school or university subject were included as evidence from a specific educational setting. Empirical studies and literature-based articles were considered, with their different contributions distinguished during interpretation.

Information Sources and Search Strategy

The literature search was conducted using Google Scholar and GARUDA (Garba Rujukan Digital), supplemented by searches of relevant educational journals. The supplementary journals were *Jurnal Didaskalia*, *Teknodika*, *Edcomtech: Jurnal Kajian Teknologi Pendidikan*, *Polyglot: Jurnal Ilmiah*, *Indonesia Journal of Religious*, *Regula Fidei: Jurnal Pendidikan Agama Kristen*, *MODERATE: Journal of Religious, Education, and Social*, *DIDAKTIKOS: Jurnal Pendidikan Agama Kristen*, *Pendas: Jurnal Ilmiah Pendidikan Dasar*, and *Didache: Jurnal Teologi dan Pendidikan Kristen*. Searches covered publications from January 2020 to October 2026. This period was selected to examine recent developments in digital education, including changes associated with the COVID-19 pandemic and subsequent educational practices.

The search used combinations of the terms "digital technology," "digital media," "Christian Religious Education," "Christian education," "digital learning," and "technology in Christian Religious Education." The term "Christian Religious Education" was retained in the search strategy to identify studies using this established subject designation. The complete search expressions, search dates, applied filters, and number of records retrieved from each source are provided in the search documentation. For Google Scholar, results were screened by relevance, with the number of results screened recorded in the search documentation.

Eligibility Criteria

Articles were eligible for inclusion when they met the following criteria:

1. Published in a scholarly journal within the specified publication period.
2. Written in Indonesian or English.
3. Available as an accessible full-text article.
4. Directly concerned with Christian education or Christian Religious Education.
5. Examined the use, implementation, contribution, or implications of digital technology in an educational process.
6. Provided sufficient information about the educational context and relevant findings or arguments.

Articles were excluded if they discussed technology without a clear relationship to Christian education, addressed theological issues without an educational component, consisted of non-scholarly opinion or commentary, duplicated another publication, or provided insufficient information for the review. Conceptual and review articles were eligible when they addressed the review questions, but their arguments were distinguished from findings generated through primary empirical research.

Study Selection

Study selection involved title and abstract screening followed by full-text assessment. Retrieved records were Study selection involved title and abstract screening followed by full-text assessment. Retrieved records were checked for duplication through manual comparison of article titles, authors, and publication details. Titles and abstracts were assessed against the eligibility criteria, and potentially relevant articles were subsequently examined in full. Ten articles met the criteria and were included in the final synthesis.

Screening was undertaken by the researcher, who was responsible for identifying relevant records, assessing eligibility, and selecting articles for inclusion. Selection decisions were based on the predefined inclusion and exclusion criteria. The selection flow diagram reports the numbers of records identified,

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duplicates removed, records screened, full-text articles assessed, and articles excluded, together with the reasons for full-text exclusion.

Data Extraction

Information extracted from each article included author and publication year, educational context, research design, type of digital technology, purpose of technology use, reported educational outcomes, benefits, and implementation challenges. The extracted information was organized in a study-characteristics table to support comparison across articles.

Data extraction was undertaken by the researcher and checked through a review of the extracted information against the corresponding full-text articles. Information not reported in an article was recorded as unavailable rather than inferred. Findings concerning motivation, participation, or access were distinguished from those concerning academic achievement, character development, or spiritual formation.

Assessment of Evidence

The articles were examined for their relevance to the review questions, clarity of educational context, methodological information, and contribution to understanding digital technology use. Greater interpretive weight was given to findings supported by clearly described methods and evidence appropriate to the claim.

No formal critical-appraisal tool was used to assess the methodological quality of the included articles. Instead, the articles were examined descriptively based on their research methods, clarity of reporting, educational context, and relevance to the review questions. This approach allowed the findings to be interpreted in relation to the type and strength of evidence available. However, the absence of a formal appraisal tool limits the extent to which the methodological quality of the included studies can be compared systematically.

Empirical studies were considered as evidence of the outcomes investigated within their particular settings. Literature-based articles contributed conceptual perspectives and interpretations rather than independent demonstrations of effectiveness. Overlap between primary studies and included reviews was considered by distinguishing empirical findings from conclusions synthesized in literature-based articles. Where similar topics or findings appeared across different publications, they were interpreted according to each article's research design and contribution rather than automatically treated as independent empirical evidence.

Data Synthesis

A descriptive thematic synthesis was used to compare findings across studies. Extracted information was grouped into recurring themes concerning digital technologies, student motivation and engagement, learning quality, teacher competence, and implementation challenges. These themes were interpreted in relation to the academic and formative purposes of Christian education.

The synthesis considered differences in educational settings, research designs, and reported outcomes when identifying common patterns. Findings were summarized narratively rather than combined into a single estimate of effectiveness. Reported benefits were interpreted cautiously, particularly where articles offered conceptual arguments or measured only short-term participation. Increased engagement was not treated as equivalent to sustained academic achievement or spiritual formation.

To address the educational and spiritual responsibilities of teachers, the synthesis also examined findings concerning instructional guidance, spiritual formation, and the development of a supportive Christian learning community. These aspects were analyzed in relation to the broader educational purposes of Christian education, while distinguishing findings explicitly reported by the included articles from the interpretation developed in this review. Teacher competence and instructional responsibilities were considered in relation to the use of digital technology, whereas spiritual guidance and community formation were examined as formative dimensions of Christian education.

TPACK (Technological Pedagogical Content Knowledge) was not applied as a formal analytical framework in this review. Instead, the analysis focused on themes emerging from the included literature, with attention to the relationship between technology use, teaching practices, educational content, and the objectives of Christian education. Any connections between these themes and TPACK are therefore interpretive rather than evidence that the included studies explicitly adopted this framework.

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RESULTS AND DISCUSSION

Overview of the Reviewed Literature

Ten articles were included within the review's 2020–2026 publication window. The literature addressed digital platforms, e-learning, Moodle, interactive resources, audio-visual materials, and gamification (Benyamin et al., 2021; Gabriel, 2022; Gulo & Tanasyah, 2022; Manuputty et al., 2025). It included empirical investigations, literature-based discussions, and previous reviews (Gabriel, 2022; Manuputty et al., 2025; Pulung et al., 2025). These different forms of evidence contributed to understanding technology use, but they did not provide equivalent support for claims about effectiveness.

The findings are presented across five themes: technological applications, student motivation and engagement, learning quality, teacher competence, and implementation challenges. The discussion subsequently considers their implications for the distinctive purposes of Christian education. Because much of the included literature concerns Christian Religious Education as a specific subject, application to Christian education across other disciplines requires consideration of the educational context.

Digital Technologies and Their Educational Purposes

The reviewed literature described several purposes for digital technology, including distributing learning materials, facilitating communication, supporting independent study, and encouraging participation (Benyamin et al., 2021; Gulo & Tanasyah, 2022). Gulo and Tanasyah (2022) discussed e-learning as an approach capable of extending educational opportunities across geographical and scheduling constraints. Benyamin et al. (2021) examined digital platforms in relation to the continuity of Christian Religious Education during educational disruption. Together, these discussions positioned technology as a means of expanding access and sustaining learning activities.

The technologies and approaches identified should nevertheless be distinguished. Moodle is a learning management system, whereas gamification is an instructional approach that may be implemented through digital tools (Gabriel, 2022; Manuputty et al., 2025). Videos and interactive resources represent forms of learning media. Treating these categories as equivalent would obscure how technology contributes to instruction. Their educational significance depends on the activities they enable and the purposes for which teachers use them.

Accordingly, the range of technologies discussed does not establish that one platform is superior or most frequently used across Christian education. The more useful question is whether a particular tool supports the intended learning activity. A platform used primarily to distribute documents serves a different function from the same platform used for discussion, feedback, and collaborative interpretation.

Student Motivation and Learning Engagement

Motivation and engagement were recurring concerns in the reviewed literature. Pello (2024), using a literature-based approach, discussed the potential of interactive content and online resources to encourage students' interest in Christian Religious Education. Manuputty et al. (2025) similarly reported motivational and participatory benefits in their review of gamification, while emphasizing the importance of appropriate planning and content selection. These publications support further investigation of engaging digital activities, although their conclusions should be understood as syntheses of existing literature rather than independent classroom interventions (Manuputty et al., 2025; Pello, 2024).

Gabriel (2022) provided empirical evidence from a quantitative questionnaire study involving 40 Christian students in grades 8 and 9 at SMP Negeri 17 Surakarta. The study reported favourable findings concerning Moodle and students' learning activity. However, evidence from a single setting and questionnaire-based measurements does not establish that the platform independently caused improvement or that comparable outcomes would occur in other institutions (Gabriel, 2022).

These findings suggest that technology can support participation, but engagement must be distinguished from learning depth. Completing an online activity, responding to a quiz, or participating frequently in discussion does not necessarily demonstrate accurate understanding, critical interpretation, or the application of knowledge. For Christian education, participation also cannot be assumed to indicate spiritual maturity. Evaluation should therefore connect engagement indicators with evidence appropriate to the intended academic or formative outcome (Chrismastianto et al., 2022; Gabriel, 2022).

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Learning Quality and Access to Resources

The literature also addressed technology's contribution to learning quality. Banurea and Lase (2026) examined digital technology utilization and learning quality through a quantitative questionnaire approach. Their study framed technology as a supporting medium for presenting biblical material, enriching resources, and facilitating contextual understanding. These dimensions are relevant to educational quality, but claims about improvement need to remain consistent with the measures and design used in the study (Banurea & Lase, 2026).

Access, engagement, and achievement should therefore be treated as related but distinct outcomes. Making materials available online may increase opportunities to study, while meaningful learning additionally requires appropriate explanations, purposeful tasks, feedback, and opportunities to address misunderstanding. Improved availability alone does not establish that learners have understood or applied the material (Benyamin et al., 2021; Gulo & Tanasyah, 2022).

Pulung et al. (2025) discussed deep learning models in Christian Religious Education alongside challenges associated with digital implementation. In this context, deep learning concerns pedagogical understanding rather than necessarily referring to artificial intelligence. This distinction reinforces the need to identify the educational process supported by technology rather than infer effectiveness from terminology associated with innovation (Pulung et al., 2025).

For practice, the synthesis suggests that teachers should select technology after specifying the learning objective. If the objective is interpretation, students need tasks requiring explanation and supporting evidence. If the objective is ethical application, an appropriate task might involve evaluating a case and justifying a response. These are implications of the synthesis rather than interventions evaluated by the present review.

Teachers as Academic and Spiritual Leaders

Teacher competence emerged as an important condition for purposeful technology integration (Chrismastianto et al., 2022; Mishra & Koehler, 2006). Chrismastianto et al. (2022) investigated spiritual formation and biblical community through a survey of 61 teachers at a Christian private school. Their findings supported continuing professional development in these areas. The study informs discussion of teacher responsibilities, but it does not demonstrate that a particular digital tool produces spiritual growth in students.

Interpreting these responsibilities together, academic leadership involves selecting credible resources, organizing instruction, providing feedback, and assessing understanding. Spiritual leadership involves modelling Christian commitments and creating opportunities for reflection and community (Chrismastianto et al., 2022; Rangga et al., 2024). In digital environments, these responsibilities can intersect when teachers guide respectful disagreement, address misleading interpretations, and connect subject learning with ethical questions. These applications represent the present review's interpretation of teachers' complementary responsibilities.

TPACK helps explain the instructional dimension of this relationship. Mishra and Koehler (2006) conceptualized effective technology integration through the interaction of technological, pedagogical, and content knowledge. This framework supports interpreting digital competence as more than operational skill: teachers need to understand how a tool supports a suitable approach to teaching particular content (Mishra & Koehler, 2006; Schmid et al., 2024).

For example, a digital discussion of a biblical passage could combine reliable subject resources, structured questions, and opportunities for feedback. Its quality would depend on the relationship among these elements. TPACK provides a perspective for examining that instructional alignment, while questions about spiritual formation require additional theological and educational consideration (Chrismastianto et al., 2022; Mishra & Koehler, 2006). The framework is used here to interpret the findings; its citation does not imply that all included studies explicitly applied or measured TPACK.

Challenges to Technology Integration

The reviewed literature identified challenges involving infrastructure, digital competence, learner access, and the relational consequences of technology use (Hellen Lae, 2025; Pulung et al., 2025). Pulung et al. (2025) discussed limitations concerning digital infrastructure and teacher technological literacy. Hellen Lae (2025), in a literature-based critical discussion, raised concerns about excessive dependence on

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digital media and weakened interpersonal relationships. These concerns indicate areas requiring attention, rather than establishing that digital learning inevitably produces such outcomes.

The practical implication is that integration should begin with an assessment of actual teaching conditions. Activities that require continuous connectivity or substantial data use may restrict participation where access is uneven. Downloadable materials, flexible participation arrangements, and accessible alternatives are therefore reasonable responses to investigate and implement according to local needs (Benyamin et al., 2021; Gulo & Tanasyah, 2022).

Professional development should likewise connect technical operation with instructional decisions. Teachers need opportunities to examine whether digital activities support the intended content, how participation will be facilitated, and what evidence will indicate learning (Chrismastianto et al., 2022; Mishra & Koehler, 2006). In Christian education, this planning should also consider how mentoring and community can be maintained through the chosen mode of instruction (Chrismastianto et al., 2022; Rangga et al., 2024).

Distinctive Purposes of Technology in Christian Education

The reviewed literature connects digital technology with explicitly Christian formative purposes. Rangga et al. (2024), through a literature study, discussed technology in relation to the renewal of the mind and spiritual development, drawing on Romans 12:2. Their contribution provides a theological rationale for purposeful technology use rather than direct evidence that digital participation produces spiritual transformation (Rangga et al., 2024).

The distinction between Christian and non-Christian education should therefore be expressed carefully. Non-Christian education encompasses diverse secular and religious traditions, many of which also value ethical development, community, and personal formation. The distinctive emphasis considered here is the explicit connection of educational practice with Christian theological commitments (Chrismastianto et al., 2022; Rangga et al., 2024).

Table 1 presents a conceptual comparison to clarify this emphasis. It is an interpretation of educational purposes, not a result from a direct comparison of institutions.

Table 1. Shared educational concerns and explicit Christian emphases in technology integration

Dimension	Shared educational concern	Explicit Christian emphasis
Purpose	Academic understanding, participation, and personal development	Connecting learning with Christian faith, discipleship, and service
Resource selection	Accuracy, relevance, accessibility, and suitability	Also considering biblical interpretation and theological coherence
Teacher responsibility	Instruction, feedback, mentoring, and care	Also modelling faith and supporting Christian formation
Digital interaction	Respectful dialogue and collaboration	Interpreting relationships through Christian understandings of community and love of neighbour
Evaluation	Evidence aligned with stated learning objectives	Also examining alignment with Christian formative purposes without equating activity with spiritual maturity

This comparison suggests that distinctiveness lies primarily in the purposes and practices guiding technology use. The same digital platform can support different educational orientations. Consequently, excellence in Christian technology integration should be understood as a goal involving academic rigor, appropriate pedagogy, inclusion, and faith-informed reflection. The available evidence does not establish that Christian institutions necessarily use technology more effectively than other institutions.

Implications and Limitations of the Synthesis

Across the reviewed literature, technology was discussed favourably in relation to participation, access, and instructional flexibility (Benyamin et al., 2021; Gulo & Tanasyah, 2022; Manuputty et al., 2025). However, recurring positive claims should not be interpreted as a single, established effect. Empirical studies, conceptual articles, and previous reviews answer different questions and may draw on overlapping evidence. Their findings cannot be treated as independent demonstrations of equal strength (Manuputty et al., 2025; Pulung et al., 2025; Schmid et al., 2024).

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The literature assembled for this review provides a limited basis for conclusions about sustained academic achievement, character development, and spiritual formation (Chrismastianto et al., 2022; Rangga et al., 2024). Future studies should distinguish these outcomes, define how they are assessed, and examine development over time. Research that combines evidence of learning with students' and teachers' accounts of their experiences could help explain how instructional design and relationships contribute to outcomes.

The scope of the review also limits generalization. Its language and accessibility criteria may exclude relevant studies, and much of the included evidence concerns Christian Religious Education as a specific subject. Application to university courses for non-theology students, including professional programs, should therefore be treated as a contextual implication requiring further investigation.

The principal contribution of this synthesis is to connect reported technological opportunities with the conditions and purposes of their use. Effective integration requires teachers to make informed instructional decisions while attending to the academic, relational, and explicitly Christian aims of education (Chrismastianto et al., 2022; Mishra & Koehler, 2006; Rangga et al., 2024).

CONCLUSION

This systematic literature review synthesized ten articles on the use of digital technology in Christian education. The reviewed literature suggests that digital platforms, e-learning, interactive resources, audio-visual materials, and gamification can support student engagement, access to learning materials, and instructional flexibility (Benyamin et al., 2021; Gulo & Tanasyah, 2022; Manuputty et al., 2025). However, differences in research designs and educational contexts limit conclusions about effectiveness (Manuputty et al., 2025; Pulung et al., 2025; Schmid et al., 2024). Evidence concerning sustained academic achievement, character development, and spiritual formation remains limited within the reviewed literature (Chrismastianto et al., 2022; Rangga et al., 2024).

The synthesis highlights the importance of teachers' complementary responsibilities as academic and spiritual leaders (Chrismastianto et al., 2022). Purposeful integration requires teachers to connect subject knowledge, appropriate pedagogy, and technological capabilities while supporting reflection, ethical conduct, and community (Mishra & Koehler, 2006; Rangga et al., 2024). TPACK offers a useful perspective for understanding instructional alignment, although it does not independently explain or establish spiritual formation (Mishra & Koehler, 2006; Schmid et al., 2024). The distinctive contribution of Christian education lies in the explicit Christian purposes guiding technology selection, teaching practices, and relationships (Chrismastianto et al., 2022; Rangga et al., 2024).

Christian educational institutions should therefore accompany technology provision with professional development, accessible learning arrangements, and evaluation aligned with clearly defined outcomes (Chrismastianto et al., 2022; Gulo & Tanasyah, 2022). Increased digital participation should not be treated as sufficient evidence of deeper understanding or spiritual maturity (Gabriel, 2022; Rangga et al., 2024). Because much of the reviewed evidence concerns Christian Religious Education as a specific subject, application across other disciplines requires contextual consideration. Future research should employ longitudinal and contextually diverse designs to examine how technology-supported teaching contributes to academic learning and Christian formation over time.

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