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Christian Educators And Connective Learning: An Empirical Survey Study

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Abstract

This study examines the strategic role of Christian educators in supporting connective learning during the era of digital transformation. Connective learning is defined as a network-based approach to learning that connects students with information sources, technology, and global communities. Through an explanatory survey method involving 318 Christian teachers in Denpasar, Badung, Tabanan, and Gianyar, this research identifies seven key roles of teachers: facilitator, knowledge curator, promoter of diverse perspectives, promoter of lifelong learning and adaptability, promoter of collaboration and social learning, technology guide, and evaluator of learning connections. The statistical analysis results show that the role of the teacher as a promoter of diverse perspectives has the most significant impact on the development of connective learning (mean = 24.76). Multiple linear regression reveals that approximately 53% of the variation in the development of connective learning can be explained by these seven roles, with an ANOVA significance value of 0.000. These findings indicate that Christian teachers play a crucial role in aligning faith-based values with digital network-based learning. This research contributes conceptually to the theory of connectivism by offering a faith-based pedagogical model that is relevant to the context of 21st-century education, where skills in

communication, collaboration, and digital literacy are integral to the learning process.

Keywords: Christian educators, connectivism, connective learning, digital transformation, faith-based pedagogy.

INTRODUCTION

The rapid advancement of digital technology has profoundly reshaped the educational landscape, particularly in the way teachers interact with students and deliver content. In today's digital age, teachers are no longer merely seen as transmitters of knowledge; instead, their roles have shifted towards becoming facilitators of learning who guide students in navigating complex networks of information (Arif Muadzin, 2021; Rahmawati & Suryadi, 2019; Sapitri et al., 2023). This pedagogical transformation requires educators to possess not only subject-matter expertise but also the ability to help students construct knowledge through diverse resources, collaborative interactions, and digital tools (Edwin, 2025).

Christian educators face a unique set of challenges within this broader transformation. They are expected not only to adapt to technological advancements but also to uphold and integrate faith-based values into their teaching practices (Lumbantoruan, 2021; Sihotang, 2020). Christian teachers work within an intersectional space, balancing moral-spiritual development with digital literacy (Jonatan & Waruwu, 2023; Masengwe & Dube, 2023). Unlike general educators, Christian teachers are tasked with fostering holistic student growth—intellectually, morally, and spiritually—while simultaneously navigating the opportunities and challenges posed by digital learning environments (Kaak & LaPorte, 2021; Mau et al., 2023). The concept of connective learning, grounded in the theory of connectivism, emphasizes the creation of knowledge through relationships among people, digital technologies, and

information sources (Boitshwarelo, 2011; Dockx et al., 2023; Goldie, 2016; Haythornthwaite, 2019; Husaj, 2015; Jancarik, 2010; Kop & Hill, 2008; Nazari et al., 2021; Park et al., 2019; Tschofen & Mackness, 2012; Vartiainen et al., 2019). In this approach, learning is not limited to direct teacher-student interaction but emerges through participation in diverse learning networks (Coelho, 2015; Griffiths & Guile, 2003; Jung, 2019; Kumi-Yeboah & Amponsah, 2023; Tschofen & Mackness, 2012). For Christian educators, connectivism offers a meaningful framework that enables them to foster not only intellectual engagement but also spiritual discernment in navigating the vast streams of digital information.

Despite the increasing relevance of connectivism in education, there is limited empirical research specifically examining how Christian educators operationalize their roles within this theoretical framework. Most existing studies on connectivism focus on secular educational contexts and overlook the faith-based nuances of teacher roles in religious education. This study seeks to address that gap by investigating how Christian educators in Bali contribute to connective learning through distinct pedagogical functions, such as promoting diverse perspectives, guiding moral reasoning, and curating spiritually aligned content in digital formats.

Thus, this study seeks to answer the following research questions: What specific roles do Christian educators play in facilitating connective learning during the digital transformation era? Which of these roles most significantly influence the development of students' connected learning experiences?

METHODS

This study utilized an explanatory survey method to explore the relationship between various roles undertaken by Christian teachers and their impact on the development of

connective learning in the context of digital transformation. The explanatory approach was chosen to quantitatively assess the contributions of specific pedagogical roles to students' learning engagement and outcomes. The research was conducted among Christian teachers in Denpasar, Badung, Tabanan, and Gianyar, with a total sample of 318 respondents selected through simple random sampling to ensure a representative coverage of the targeted regions.

Data were collected through a structured online questionnaire, which was distributed via Google Forms. The questionnaire used a five-point Likert scale, ranging from "strongly disagree" to "strongly agree," (Anjaria, 2022; Kriksciuniene et al., 2019; Kusmaryono et al., 2022; Wu & Leung, 2017) to assess participants' perceptions across seven predefined teacher roles: facilitator, curator of knowledge, promoter of diverse perspectives, promoter of lifelong learning and adaptability, promoter of collaboration and social learning, technology guide, and evaluator of learning connections. The questionnaire items were developed based on established theoretical constructs and were reviewed by experts in Christian education and digital pedagogy to ensure content validity. To evaluate the reliability of the instrument, Cronbach's Alpha analysis was conducted, with all constructs achieving alpha values above 0.70, indicating satisfactory internal consistency.

Quantitative data were analyzed using SPSS (version 25). Descriptive statistics, including mean, standard deviation, mode, and variance, were computed to examine the central tendency and distribution of the responses (Ahmed, 2025; Becerra et al., 2021; De Muth, 2019; "Descriptive Statistics," 2024; Green et al., 2022; Lee, 2019; Rendón-Macias et al., 2016; Sanchez, 2023; Vetter, 2017). Inferential statistical techniques were employed to test the hypotheses. Multiple linear regression analysis was carried out to determine the extent to which the seven teacher roles influenced the development of connective learning. The

regression model included tests for the statistical significance of each variable using t-tests, and the overall model fit was assessed through ANOVA (Aslam, 2024; Jankowski et al., 2018; Mishra et al., 2019; Thukral et al., 2023). The conceptual model used in this study mapped the seven teacher roles as independent variables, while the Christian teacher’s function in fostering connective learning served as the dependent variable. This methodological framework provided a solid empirical foundation for identifying which teacher roles have the most significant effect on student learning in a digitally connected environment, particularly within the faith-based context of Christian education.

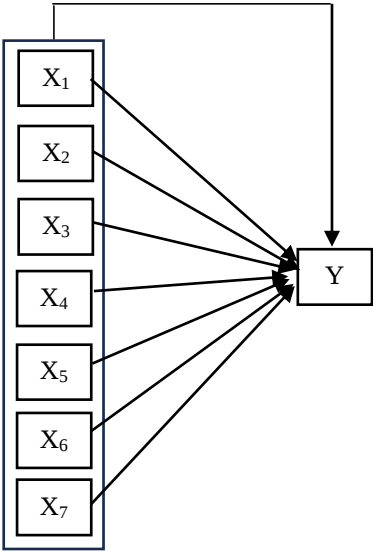


Figure 1: Relationship Patterns of Endogenous and Exogenous Variables

Information

Y = Christian Teachers in Connective Learning

X₁ = Teacher as Facilitator

- X_2 = Teachers as Curators of Knowledge
 X_3 = Teachers as Promoters of Diverse Perspectives
 X_4 = Teachers as Promoters of Lifelong Learning and Adaptability
 X_5 = Teachers as Promoters of Collaboration and Social Learning
 X_6 = Teachers as Technology Drivers
 X_7 = Teachers as Evaluators of Learning Connections

RESULTS

In order to explore the role of Christian teachers in Denpasar in fostering connective learning during the digital transformation era, seven measurement aspects are applied: Teachers as Facilitators, Teachers as Curators of Knowledge, Teachers as Promoters of Diverse Perspectives, Teachers as Advocates for Lifelong Learning and Adaptability, Teachers as Encouragers of Collaboration and Social Learning, Teachers as Technology Guides, and Teachers as Assessors of Learning Connections. A summary of the descriptive statistics is provided in the table below.

Table 1: Descriptive Data

		X1	X2	X3	X4	X5	X6	X7	Y
N	Valid	318	318	318	318	318	318	318	318
	Miss.	0	0	0	0	0	0	0	0
Mean		24,08	23,66	24,76	23,97	24,07	24,24	24,51	40,20

Std. Error of Mean	0,100	0,121	0,045	0,108	0,104	0,095	0,074	0,276
Median	25,00	25,00	25,00	25,00	25,00	25,00	25,00	40,00
Mode	25	25	25	25	25	25	25	36
Std. Deviation	1,787	2,162	,798	1,925	1,861	1,697	1,314	4,915
Variance	3,195	4,673	,637	3,705	3,462	2,881	1,727	24,153
Range	9	9	5	9	10	9	9	20
Minimum	16	16	20	16	15	16	16	30
Maximum	25	25	25	25	25	25	25	50
Sum	7659	7524	7874	7621	7655	7707	7794	12783

The descriptive statistical data presented above reflects the results from 47 valid samples regarding the role of Christian teachers in Denpasar in promoting connective learning during the digital transformation era, This data covers seven measured variables: Teacher as Facilitator (X1),

Knowledge Curator (X2), Promoter of Diverse Perspectives (X3), Promoter of Lifelong Learning and Adaptability (X4), Promoter of Collaboration and Social Learning (X5), Technology Guide (X6), and Evaluator of Learning Connections (X7), as well as the dependent variable Y, which represents the overall role of teachers in connective learning. From the mean scores, it is evident that the role of Teachers as Promoters of Diverse Perspectives (X3) holds the highest average value, with a score of 24,76. This indicates the significant importance of this role in the context of connective learning, suggesting that teachers who promote diverse perspectives greatly influence the success of network-based learning. Other roles, such as Promoter of Teacher as Facilitator (X1) (24,08), Knowledge Curator (X2) (23,66), and Promoter of Lifelong Learning and Adaptability (X4) (23,97), Promoter of Collaboration and Social Learning (X5) (24,07), Technology Guide (X6) (24,24), and Evaluator of Learning Connections (X7) (24,51) also show high average scores, highlighting their importance in fostering student engagement in digital learning.

Regarding the median values, most variables, including X1, X2, X3, X4, X5, X6, and X7, have values of 25. The mode values, or the most frequently occurring scores, also highlight the prominence of certain roles. The highest mode values of 25 are recorded for all, suggesting that many respondents perceive these roles as extremely important.

The standard deviation provides insights into the variability of perceptions regarding the importance of these roles. For the variables Promoter of Lifelong Learning and Adaptability (X4) and Promoter of Collaboration and Social Learning (X5), the standard deviations are 1.925 and 1.861, respectively, suggesting greater variability in responses. This indicates that respondents have diverse views on the significance of these roles. In contrast, variables with smaller standard deviations, such as Teacher as Facilitator (X1) (1.787), show less variability in perceptions. These values reflect that,

overall, the responses for these roles tend to be more consistent.

Variance and range further highlight the distribution of the data. The range for each teacher role spans from 5 to 10 points, which indicates that the responses for these roles are distributed across a broad spectrum. For the dependent variable Y, the range of 20 points indicates a greater variation in perceptions regarding the overall role of teachers in connective learning.

The minimum and maximum values for each role reveal a broad distribution of responses among the participants. For instance, the minimum value of 16 for Teacher as Facilitator (X1) and 15 for other variables suggests that a small group of respondents might view these roles as less important. However, the maximum score of 25 for all roles indicates that the majority of respondents consider these roles to be highly significant in supporting learning in the digital era.

In terms of total scores, the highest score was for the Promoter of Collaboration and Social Learning (X5), which scored 7655, underscoring the essential role of interaction and collaboration in the context of connective learning. The dependent variable Y, with a total score of 12783, reflects that the overall role of teachers in developing communicative learning is regarded as very important by the respondents.

Tabel 2: Model Summary

Mode 1	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	0, 72 8 ^a	0,530	0,520	11,951	2,111

Based on the data presented in Table 2 above, the multiple correlation value (R) between the teacher variables—Teachers

as Facilitators, Teachers as Curators of Knowledge, Teachers as Promoters of Diverse Perspectives, Teachers as Promoters of Lifelong Learning and Adaptability, Teachers as Promoters of Collaboration and Social Learning, Teachers as Technology Guides, and Teachers as Evaluators of Learning Connections—and the role of Christian teachers in the development of connective learning during the digital transformation era is 0.728. This indicates a strong correlation between these teacher roles and the development of connective learning in the digital age.

Additionally, the contribution of these teacher variables to the role of Christian teachers in developing connective learning in the digital era is reflected in the R Square value of 0.530. This means that approximately 53% of the variation in the development of connective learning can be explained by the teacher variables included in this model. The remaining influence is attributed to other variables not included in this model.

Tabel 3: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Reg.	4061,361	7	580,194	50,028	0,000 ^b
	Res.	5569,931	310	142,819		
	Tota1	28373,957	317			

Based on the data presented in Table 3: Anova, this output presents the results of the F test (regression coefficient test), which is used to evaluate the significance of the impact of teacher variables — Teachers as Facilitators, Teachers as Curators of Knowledge, Teachers as Promoters of Diverse Perspectives, Teachers as Promoters of Lifelong

Learning and Adaptability, Teachers as Promoters of Collaboration and Social Learning, Teachers as Technology Guides, and Teachers as Evaluators of Learning Connections — on the role of Christian teachers in the development of communicative learning during the digital transformation era.

If the significance value is below 0.05, it indicates a significant effect. The significance value shown in Table 3 is 0.000, meaning there is a joint effect between the teacher variables (Facilitators, Curators of Knowledge, Promoters of Diverse Perspectives, Promoters of Lifelong Learning and Adaptability, Promoters of Collaboration and Social Learning, Technology Guides, and Evaluators of Learning Connections) and the role of Christian teachers in fostering connective learning in the digital era.

Tabel 4: Coefficient

Model		Unstandardized Coefficients		Stan d. Coeff.	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11,477	6,628		1,732	0,084
	Teacher as Facilitator	0,683	0,156	0,248	4,372	0,000
	Teachers as Curators of Knowledge	0,524	0,135	0,231	3,897	0,000
	Teachers as Promoters	-1,747	0,450	-0,284	-3,878	0,000

	of Diverse Perspectives					
	Teachers as Promoters of Lifetime Learning and Adaptability	0,669	0,154	0,262	4,341	0,000
	Teachers as Promoters of Collaboration and Pemb. Social	0,414	0,160	0,157	2,580	0,010
	Teachers as Technology Drivers	0,366	0,179	0,126	2,041	0,042
	Teachers as Evaluators of Learning Connections	0,337	0,271	0,090	1,246	0,214

This study sought to explore the role of Christian teachers in fostering connective learning amidst the ongoing digital transformation in education. The research aimed to examine various roles that teachers, particularly Christian educators, play in facilitating meaningful learning experiences in a

digitally enhanced environment. Key roles, such as facilitator, curator of knowledge, promoter of diverse perspectives, technology driver, and evaluator of learning connections, were tested to assess their potential impact on student learning outcomes.

The findings from the linear regression analysis revealed that several teacher roles had a statistically significant effect on the learning outcomes measured in the study, with the exception of a few roles.

In particular, the teacher role as a facilitator of learning demonstrated a significance value of 0.000, which is well below the standard threshold of 0.05 for statistical significance. This result indicates that, in the context of this study, the Christian teacher's role as a facilitator had a significant influence on the students' learning outcomes during the digital transformation process.

Similarly, the role of the teacher as a curator of knowledge produced a significance value of 0.000, suggesting that this role did indeed have a meaningful impact on the learning outcomes tested. The critical nature of organizing and directing knowledge in Christian educational practices is reflected in its significant contribution to improved learning outcomes.

The teacher's role as a promoter of diverse perspectives resulted in a significance value of 0.000, implying that this role significantly contributed to enhancing the learning outcomes within the study's scope. Furthermore, the teacher's role in promoting lifelong learning and adaptability showed a significance value of 0.000, reinforcing the conclusion that this role played a significant part in the outcomes tested.

The role of the teacher as a promoter of collaboration and social learning recorded a significance value of 0.010, which is also below the threshold of 0.05, indicating a significant influence on the learning outcomes observed in this research. Despite the well-established value of collaboration in

educational theory and its relevance in Christian pedagogy, this role did demonstrate a positive and significant impact on learning outcomes.

Regarding the teacher's role as a technology driver, the significance value of 0.042 was below 0.05, indicating that, despite the increasing emphasis on technology in modern Christian education, this role did have a significant effect on the learning outcomes measured in the study.

Lastly, the teacher's role as an evaluator of learning connections showed a significance value of 0.214, which exceeds the 0.05 threshold. This result suggests that, in this study, the teacher's role in evaluating learning connections did not significantly contribute to the improvement of the learning outcomes.

DISCUSSION

The Role of Christian Teachers in Developing Communicative Learning

This study reaffirms the essential role of Christian educators in cultivating communicative learning in the context of digital transformation. Rather than merely transmitting content, Christian teachers serve as connective agents who bridge knowledge, values, and relationships. This role is not only pedagogical but also spiritual, rooted in the Christian imperative to build community, engage in meaningful dialogue, and speak the truth in love (Ephesians 4:15).

The role of the teacher as a Facilitator emerged as particularly influential. This aligns with connectivist theory, which emphasizes the importance of enabling learners to form networks of meaning and interaction (Griffiths & Guile, 2003; Huang et al., 2020; Transue, 2013; Wang et al., 2017). In practice, Christian teachers functioning as facilitators do more than organize classroom dialogue—they create space for voice, vulnerability, and value-driven discourse. Their

ability to encourage both expressive and reflective communication supports not only skill development but also personal and spiritual growth. In digital contexts, this role becomes even more vital, as communication increasingly occurs across platforms that require both critical literacy and ethical discernment.

Similarly, the teacher as a Knowledge Curator does not merely organize content but embodies discernment (Krysa, 2015; Thompson, 2013; Üstek, 2019) —a biblical principle often associated with wisdom. By selecting, framing, and contextualizing information, educators help students navigate the overwhelming digital landscape (Cyr et al., 2021; Hoch et al., 2019; Housand, 2021). Within a connectivist learning framework, this function enhances students' ability to critically engage and communicate ideas across domains (Transue, 2013; Wang et al., 2017). It also reflects the teacher's role in helping learners distinguish between noise and knowledge, aligning digital fluency with scriptural truth (Jancarik, 2010; Transue, 2013).

The role of the Promoter of Diverse Perspectives—rated highest in this study—reflects a deeply Christian commitment to understanding others. This role extends beyond cognitive diversity; it models Christ-centered openness to dialogue across difference. In a globalized digital world, communicative competence involves not only articulating one's views but also empathetically engaging with the perspectives of others. This resonates with the connectivist emphasis on learning as participation in a network of varied voices (Beri, 2018; Czerkawski, 2016; Jung, 2019; Rytönen & Kaivola, 2009; Shankar et al., 2024). From a theological view, it also echoes the biblical vision of the body of Christ composed of many parts (1 Corinthians 12:12–27), where diversity is not only accepted but essential for flourishing.

The roles of Lifelong Learning and Adaptability Guide and Technology Drivers further complement communicative

learning in a digital environment. Connectivism views learning as a continual, adaptive process (Jung, 2019; Mukhlis et al., 2024; Transue, 2013). Christian teachers who model openness to change, resilience in learning, and responsible use of technology signal to students that faith and adaptability are not mutually exclusive, but mutually reinforcing. These roles encourage students to see communication not as static performance, but as a living practice—rooted in humility, curiosity, and transformation. Thus, communicative learning, when framed through the dual lenses of connectivist pedagogy and Christian education, becomes more than skill acquisition. It becomes a formative process—cultivating voices that are not only informed and articulate, but also gracious, discerning, and rooted in eternal truth.

The Most Significant Role of Teachers in Developing Connective Learning

In the context of connective learning, Christian educators are called to do more than facilitate classroom interaction—they are positioned as catalysts for building relational and intellectual networks both within and beyond the classroom. One of the most impactful roles identified in the study is that of the Promoter of Collaboration and Social Learning. This function aligns directly with the core principles of connectivism, which holds that knowledge is not only located in the mind of an individual but is formed through the connections between people and information across a digital network (Siemens, 2005; Griffiths & Guile, 2003).

Promoting collaboration goes beyond simply organizing group work; it involves shaping a learning culture rooted in relational engagement, mutual respect, and shared meaning-making (Davis et al., 2017; Hamilton, 2019; O'Toole & Holden, 2013; Preece et al., 2025). In the realm of Christian education, this role takes on added significance.

Collaboration mirrors a biblical understanding of community and the body of Christ (Beed & Beed, 2015; Franklin, 2020; Henson et al., 2025; S. Pickard, 2009; S. K. Pickard, 2010; Thomas, 2015), where each learner contributes uniquely to the whole (1 Corinthians 12:12–27). Teachers who model and promote this kind of collaboration help students not only build knowledge but also practice Christ-like fellowship, empathy, and service within academic settings (Burke & Segal, 2015; Cettolin, 2024; Feldmeier, 2024; Gemeinhardt, 2024; Herbst, 2023; McKinney & Hill, 2016).

While the role of Technology Drivers is not ranked as the highest in terms of impact, it plays a crucial supporting role in facilitating connective learning in the digital age. Christian teachers who guide students in the ethical and purposeful use of technology contribute to the development of digitally literate disciples capable of engaging critically with online communities (Adebule, 2009; Suliman et al., 2023; Vrabec et al., 2013). In a connectivist framework, technological proficiency is more than just a skill—it serves as a gateway to meaningful participation in knowledge networks (Beri, 2018; Czerkawski, 2016; Jung, 2019; Rytönen & Kaivola, 2009; Shankar et al., 2024; Wang et al., 2017). For Christian educators, this also includes fostering discernment in students, teaching them to seek truth and goodness amidst the vast array of information found in the digital world.

Although the role of Evaluator of Learning Connections did not emerge as statistically significant in this study, it remains conceptually important. In the context of connectivism, evaluation is not merely about measuring outcomes but also about guiding students to reflect on the quality and purpose of the connections they form. For Christian teachers, this reflection serves as both a spiritual and intellectual act of discernment—helping students assess whether their connections foster wisdom, character, and alignment with God's truth. The lack of statistical

significance for this role suggests a need for more emphasis on reflective evaluation in Christian classrooms.

The broader significance of these roles is affirmed by the regression analysis, which demonstrates that a substantial proportion of the variation in students' development of connective learning is explained by the teacher roles examined. This underscores the idea that connectivity in education does not arise automatically from access to digital tools. Rather, it must be intentionally cultivated through pedagogy that is relational, reflective, and spiritually grounded. Thus, Christian teachers are not simply passive participants in technological shifts but active agents of transformation who weave together faith, learning, and connection into a cohesive whole.

CONCLUSION

This study emphasizes the strategic and multidimensional role of Christian educators in developing connective learning amidst the rapidly advancing digital transformation. In this context, learning is no longer limited to a one-way transfer of knowledge but becomes a collaborative process that builds a network of meaning through interactions among learners, technology, and global information sources. The role of Christian educators is unique as they must align the demands of digital technology with the values of Christian faith and spirituality.

A survey of 318 Christian teachers in Bali revealed seven key roles that educators play in supporting connective learning: facilitator, knowledge curator, promoter of diverse perspectives, promoter of lifelong learning and adaptability, supporter of collaboration and social learning, technology guide, and evaluator of learning connections. Among these roles, the role of promoting diverse perspectives was found to have the most significant impact on enhancing the connective learning experience.

Regression analysis shows that approximately 53% of the variation in the development of connective learning can be explained by these seven teacher roles, with an ANOVA significance value of 0.000. This indicates that these roles contribute significantly to the success of networked-based digital learning. Specifically, the roles of facilitator, knowledge curator, promoter of lifelong learning, and promoter of collaboration and social learning showed highly significant influence. On the other hand, the role of evaluator of learning connections did not show a statistically significant impact, though it remains conceptually relevant.

These findings reinforce the paradigm of connectivism as a pedagogical approach that is relevant to 21st-century education, particularly when combined with the principles of Christian faith. Christian teachers are not only agents of transformation in the digital classroom but also servants who instill values of love, wisdom, and justice in networked learning processes. Thus, they are preparing students not only to become savvy digital citizens but also reflective, critical individuals rooted in their faith values.

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