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The Role of Christian Teachers based on Denpasar Local Wisdom in Developing Connectivist Learning in the Era of Digital Transformation

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Abstract

This study aims to find out the role of Christian teachers in Denpasar in developing communicative learning in the era of digital transformation as well as the most significant factors that affect the role of teachers in the development of learning. The research method used was an explanatory survey, using a questionnaire distributed to 47 Christian teachers in Denpasar. The data obtained were analyzed using a regression model to evaluate the relationship between various teacher roles (as facilitators, knowledge curators, promoters of diverse perspectives, promoters of lifelong learning, promoters of collaboration, technology guides, and evaluators of learning connections) and the development of connective learning. The results of the study show that the role of Christian teachers in Denpasar in developing connective learning in the era of digital transformation has been going well and the role of teachers as promoters of collaboration and social learning is the most significant role in developing connective learning.

Keywords: christian teachers; connective learning; digital transformation era

Introduction

The dynamics of change in the field of education, especially in the digital era, have changed the role of teachers and the learning process. The teacher is no longer the only provider of knowledge; rather, it serves as a facilitator that helps students access, understand, and utilize information from a global network (Edwin, 2022). Christian teachers play a strategic role in ensuring that education remains relevant to technological developments without neglecting Christian values. Indeed, Christian teachers are at a unique crossroads between faith-based education and digital integration, especially through modern pedagogical approaches (Masengwe and Dube, 2023).

The role of a Christian teacher is more than just a delivery of learning materials. They are responsible for educating students holistically, addressing the academic, moral, and spiritual dimensions (Lase, Daeli, Ndraha, & Harefa, 2021), thus shaping students into capable, morally and spiritually strong individuals (Masengwe & Dube, 2023). In addition, Christian teachers should also utilize technology as a tool to enhance the learning process and develop

21st century skills in students (Edwin, 2022). This requires Christian teachers not only to understand technology but also to effectively apply pedagogical methods such as connectivity to optimize student learning outcomes in the digital age (Edwin, 2022).

Connectivism suggests that learning is no longer a linear process or completely dependent on direct teacher-student interaction (Weeler, 2015). Instead, it emphasizes that learning occurs through networks and relationships between different sources of information, individuals, and technologies (Transue, 2013). In connectivism, learning is seen as a process of building knowledge that involves the ability to access and manage information from a variety of sources, including digital media, information technology, and social networks (Johansson, Contero, Company, & Elgh, 2018). As a result, the role of teachers shifts from just conveying information to facilitators who guide students in building a network of knowledge and skills (Weeler, 2015).

In the context of technology-based education, the application of connectivity is very relevant to support the learning process carried out by Christian teachers. In this era of digital transformation, teachers must combine a connectivity approach with the use of technology to create a more effective and relevant learning experience. Technology-based teaching allows students to learn not only from textbooks but also from a variety of digital sources accessible via the internet (Tham, Duin, Veeramoothoo, & Fuglsby, 2021). Christian teachers in Denpasar should be able to assist students in finding, organizing, and evaluating information from these sources, and teach them how to apply it in their daily lives in accordance with Christian values.

The importance of connectivity and technology-based teaching is very evident in today's digital era (Vas, Weber, and Gkoumas, 2018). Traditional teaching, which focuses on one-way teaching and limited information resources, is no longer enough to meet the needs of students living in a digitally saturated world of information (Tham et al., 2021). Connectivism allows students to engage more actively in the learning process, develop critical thinking skills, (Alam, 2023) and establish connections with various sources of information in a global network (Al-Maawali, 2022). Meanwhile, technology-based teaching offers students faster and broader access to knowledge, as well as opportunities for more independent and flexible learning (Reese, 2015). While connectivity has been widely adopted in various fields of education, (Coronado, 2018) its application in religious education, especially among Christian educators, is still poorly explored. In addition, there is a lack of in-depth studies on how Christian teachers use technology to convey spiritual and moral values to students.

Previous research has highlighted the role of Christian teachers in the context of faith- and character-based education, but it is still limited in linking it to local wisdom and modern learning paradigms such as *connectivist learning* in the digital age. Most studies, such as those conducted by Harefa (2020) and Hutagalung (2021), focus on the integration of Christian values in pedagogical practice without considering local cultural dimensions that can reinforce the relevance of learning. On the other hand, research on learning connectivism (Siemens, 2005; Downes, 2012) focuses more on the aspects of technology and digital networks, but has not studied in depth how the values of local wisdom, especially the local wisdom of Denpasar such as *samasama braya* and *tat twam asi*, can be integrated in the pedagogical practice of Christian teachers. Therefore, this research has novelty in its efforts to construct the role of

Christian teachers based on Denpasar local wisdom as agents of shaping connectivist learning rooted in local spiritual and cultural values in the context of digital transformation of education. These findings are expected to expand the integrative paradigm between the Christian faith, local wisdom, and the theory of connectivism that has been studied separately in the Christian education literature and educational technology studies.

Methods

This study uses an explanatory survey method to explain in depth the relationship between the variables studied. This research can also be categorized as *neuro-research*, i.e., studies that use representative samples to draw conclusions about populations, even though the overall condition of the population is not always reachable (Fios, Sasmoko, & Gea, 2016). In this study, the main variable studied was the bound variable, which functioned as an endogenous variable. These variables are studied in depth by building a theoretical model called *construct*. *Construct* It consists of indicators called exogenous variables. These exogenous variables are obtained through theoretical studies that are used to explain and influence endogenous variables (Fios et al., 2016).

Overall, the endogenous variables in this model are described by exogenous variables, and the relationship between these two types of variables is tested in the study to understand the deeper patterns of relationships between the factors involved. This academic model basically describes the pattern of relationships between exogenous and endogenous variables that are tested through empirical analysis. Here is a picture of the relationship between exogenous and endogenous variables (Edwin, 2012). The population in this study is Christian teachers who teach in Christian schools. The sample in this study amounted to 47 people who were selected using simple random sampling. Data was collected by distributing questionnaires through Google Forms. The use of Google Forms was chosen to facilitate online data collection. Descriptive analysis was used to determine the role of Christian teachers in the learning of connectivism, while multiple regression tests were used to determine the most significant role in the development of connectivist learning.

Findings and Discussion

Research Results

To find out the role of Christian teachers in Denpasar in developing connective learning in the era of digital transformation, there are seven aspects of measurement applied, namely: Teachers as Facilitators; Teachers as Knowledge Curators, 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 Learning Connection Evaluators. A summary of descriptive statistics is presented in the following table.

Table 1: Descriptive Data

		X1	X2	X3	X4	X5	X6	X7	And
N	Valid	47	47	47	47	47	47	47	47
	Put.	0	0	0	0	0	0	0	0
	Mean	20,62	20,66	21,32	21,19	21,51	21,19	21,06	145,15
	Median	21	21	22	22	22	21	21	150
	Mode	20	20	20	24	20	25	25	150
	Std. Dev	3,366	3,312	3,382	3,860	3,816	3,921	3,914	24,836
	Variance	11,33	10,97	11,44	14,90	14,56	15,38	15,32	616,83
	Range	19	20	20	20	20	20	20	139
	Minimum	6	5	5	5	5	5	5	36
	Maximum	25	25	25	25	25	25	25	175
	Sum	969	971	1002	996	1011	996	990	6822

The descriptive statistical data above illustrates the results of 47 valid samples related to the role of Christian teachers in Denpasar in the development of connectivistic learning in the era of digital transformation. This data includes seven variables measured: Teacher as Facilitator (X_1), Knowledge Curator (X_2), Diverse Perspectives Promoter (X_3), Lifelong Learning and Adaptability Promoter (X_4), Collaboration and Social Learning Promoter (X_5), Technology Guide (X_6), and Learning Connection Evaluator (X_7), as well as the dependent variable Y which represents the overall role of teachers in connectivity learning.

From the mean or average data, it can be seen that the average value of the teacher's role as a Promoter of Collaboration and Social Learning (X_5) is the highest with 21.51, showing the importance of this role in the context of connective learning. Teachers who encourage collaboration seem to have a big influence on the success of network-based learning. Other roles, such as Diverse Perspectives Promoter (X_3) (21.32), Lifelong Learning Promoter (X_4) (21.19), and Technology Guide (X_6) (21.19), also recorded high average scores, indicating that this role plays an important role in supporting student engagement in digital learning.

The average score of Teachers as Facilitators (X_1) and Knowledge Curators (X_2) is around 20.62 and 20.66, which are still relatively high, but slightly lower than other roles. This may indicate that while the role of facilitators and curators is important, there are other aspects such as collaboration and diverse perspectives that are more prominent in the development of learning in the digital age.

At median values, most variables, including X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , and X_7 , have values of 21 or higher. Collaboration Promoter (X_5) stands out with a median score of 22, emphasizing

the role of collaboration as a key factor in the learning process. The mode values or values that appear most often on some variables indicate a specific role, such as Collaboration Promoter (X_5) and Technology Guide (X_6), which have the highest mode value, which is 25, indicating that in many cases, respondents see this role as very important.

The standard deviation indicates how much the data varies from the mean. For the variables of Promoter of Lifelong Learning and Adaptability (X_4) and Promoter of Collaboration and Social Learning (X_5), the standard deviations were 3.860 and 3.816, respectively, indicating greater variation than the other roles. This suggests that perceptions of the importance of this role are quite diverse among respondents. In contrast, variables with smaller standard deviations such as Facilitator (X_1) (3,366) showed lower perceptual variation.

Variance and *range* reinforce the data distribution picture, with the range of values for each teacher's role ranging from 19 to 20 points, while for the dependent variable Y, a wider range of 139 indicates greater variability in view of the overall role of teachers in connective learning.

The minimum and maximum values for each role indicate a wide distribution of responses among respondents. For example, a minimum score of 6 for the Facilitator (X_1) and 5 for other variables suggests that a small percentage of respondents may consider these roles less important. However, a maximum score of 25 for all variables indicates that most respondents rate these roles as crucial in supporting learning in the digital age.

Overall, the total results show how much the total contribution of each teacher's role is. The highest total score for Collaboration and Social Learning Promoters (X_5) (1011) emphasizes the importance of interaction and collaboration in the context of connective learning. The dependent variable Y with a total score of 6822 shows that the role of teachers in the development of overall connectivity learning is seen as very important by respondents.

In general, this data provides a comprehensive overview of respondents' perceptions of the various roles of teachers in supporting connectivity-based learning in the digital era. The role of collaborative and the promotion of lifelong learning stands out, while the role of facilitator and curator of knowledge, while important, seems to be more supportive. This data confirms the importance of a connected, collaborative, and flexible learning approach in the era of digital transformation.

Tabel 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,896a	0,804	0,768	11,951

Based on table 2 above, the results of multiple correlation values (R) between the variables of 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 connective learning in the era of transformation digital by 0.896. This shows that the

relationship between the variables of the teacher as a facilitator; 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, the role of Christian teachers in the development of connective learning in the era of digital transformation is very strong. Meanwhile, the contribution of the influence of the teacher's variables 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, to the role of Christian teachers in the development of connectivist learning in the era of digital transformation of 0.804 as shown by *r square*, the rest are affected by other variables that are not included in this model.

Table 3: Anova

	Model	Sum of Squares	df	Mean Square	F	Itself.
1	Reg.	22804,027	7	3257,718	22,810	0,000b
	Residual	5569,931	39	142,819		
	Total	28373,957	46			

Output this explains the results of the F test (regression coefficient test together) which is used to test the significance of the influence of the Teacher's variable as a Facilitator; 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 Connectivist Learning in the Era of Digital Transformation. If the significance < 0.05 then the conclusion has an effect. It is known that the significance value of table 2 above is 0.000, so the conclusion is that there is a joint influence (Priyatno, 2012) between the variables of the teacher as a facilitator; 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 Connectivist Learning in the Era of Digital Transformation.

Table 4: Coefficients

	Model	Unstandardized Coefficients		Stand. Coefficients	t	Itself.
		B	Std. Error	Beta		
1	(Constant)	9,346	12,078		0,774	0,444
	Teachers as Facilitators	1,370	1,148	0,186	1,193	0,240
	Teachers as Curators of Knowledge	0,538	0,926	0,072	0,581	0,565
	Teachers as Promoters of Diverse Perspectives	0,116	1,287	0,016	0,090	0,929
	Teachers as Promoters of Pemb. Lifetime and Camp. Adapt	0,888	1,578	0,138	0,563	0,577
	Teachers as Collaboration Promoters and Pemb. Social	1,788	1,404	0,275	1,274	0,210
	Teachers as Technology Guides	0,655	1,076	0,103	0,609	0,546
	Teachers as Learning Connection Evaluators	1,083	1,840	0,171	0,589	0,560

Based on the values as shown in table 4, the following equation is obtained:

$$Y = 9,346 + 1,370X_1 + 0,538 X_2 + 0,116X_3 + 0,888X_4 + 1,788X_5 + 0,655X_6 + 1,083X_7$$

In accordance with the above equation, it is concluded that if the role of teachers is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 1,370. If the role of teachers as curators of knowledge is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 0.538. If the role of teachers as promoters of diverse perspectives is increased, the role of Christian teachers in the

development of connective learning in the era of digital transformation will increase by 0.116. If the role of teachers as promoters of lifelong learning and adaptability is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 0.888. If the role of teachers as promoters of collaboration and social learning is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 1,788. If the role of teachers as technology guides is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 0.655. If the role of teachers as evaluators of learning connections is increased by one unit, the role of Christian teachers in the development of connective learning in the era of digital transformation will increase by 1,083.

Discussion

First, this research focuses on the role of Christian teachers in Denpasar in developing a connectivist learning approach in the era of digital transformation. This study highlights seven important aspects of the role of teachers, namely as 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.

The theory of connectivity, introduced by George Siemens, (Scott, 2011) Viewing learning is no longer a linear process in which the teacher is the only source of information, but rather as a network of relationships formed between various sources of information, technology, and individuals (Scott, 2011). In this context, teachers play the role of facilitators who help students manage and understand information from various digital sources (Dunn & Schultz, 2020). The study found that the role of Christian teachers as facilitators was very dominant, with an average score of 20.62. This shows that teachers in Denpasar have played an active role in helping students explore digital resources and build understanding independently.

In addition, the teacher's role as a curator of knowledge also stands out, with an average score of 20.66. In the digital information era, students often need guidance to sift through credible and relevant information (Greenwood, 2023). Christian teachers in Denpasar play an important role in helping students choose quality information amid the rapid flow of digital data, strengthening the role of teachers as mentors in the selection and evaluation of quality learning resources.

His role as a promoter of diverse perspectives was also in the spotlight, with an average score of 21.32. The teacher encourages students to consider various points of view in understanding the material, in accordance with the principle of connectivityism that values diversity of perspectives as an essential element in the learning process. Christian teachers in Denpasar have succeeded in encouraging students' openness to various thoughts, both in academic contexts and spiritual values.

Furthermore, teachers also play an important role as promoters of lifelong learning, with an average score of 21.19. In the theory of connectivityism, learning is seen as a continuous process in which students must continuously learn and adapt to changes,

including new technologies. Christian teachers in Denpasar have succeeded in instilling this spirit of lifelong learning, preparing students to continue to thrive in a dynamic and ever-changing world.

Overall, this study shows that Christian teachers in Denpasar have played a significant role in applying the principles of connectivity in the learning process, helping students to not only master academic materials, but also become independent learners who are ready to face the challenges of the digital age.

Second, the Most Significant Role of Teachers in Developing Connectivistic Learning. Based on the regression results obtained from the equation $Y = 9.346 + 1.370X_1 + 0.538X_2 + 0.116X_3 + 0.888X_4 + 1.788X_5 + 0.655X_6 + 1.083X_7$, the analysis shows various roles of teachers in developing connectivistic learning. Each variable of the teacher's role has a coefficient that shows a significant impact on the connectivist learning process.

The role of the teacher as a facilitator (X_1) with a coefficient of 1.370 indicates that each one unit increase in this role will increase connectivistic learning by 1.370 units. This role is very significant because teachers as facilitators function to help students build knowledge independently through information networks. (Khafaga & Al-Johani, 2024) This is in line with the theory of connectivityism that places teachers as guides who help students access and utilize various sources of information. (Abraham, 2015)

Furthermore, the role of the knowledge curator (X_2) has a coefficient of 0.538, indicating that a one-unit increase in this role will increase connectivistic learning by 0.538 units. Although important, the role of the curator has a smaller impact than the role of the facilitator. This is because curators play a role in helping students choose relevant and reliable information, (Shamina & Starodubtsev, 2015) but it does not directly affect students' interaction with knowledge.

The role as a promoter of diverse perspectives (X_3) shows a smaller coefficient, which is 0.116. This indicates that although connectivity emphasizes the importance of diverse perspectives in learning, the contribution of this role in research contexts is lower. This may be due to the lack of optimization of the integration of diverse perspectives in the Christian education environment in Denpasar.

On the role of promoters of lifelong learning and adaptability (X_4), a coefficient of 0.888 shows a significant impact on the development of connectivistic learning. This reflects the importance of encouraging students to continue learning and adapting to technology and change in the digital age, in line with the principles of connectivity that emphasize continuous learning (Dziubaniuk, Ivanova-Gongne, & Nyholm, 2023).

The role as a promoter of collaboration and social learning (X_5) has the highest coefficient, which is 1.788. This signifies that collaboration and social interaction have the greatest influence in connectivistic learning. This role shows how important it is for students to share and build knowledge together in an interconnected social network.

As a technology guide (X_6), teachers also have an important role, with a coefficient of 0.655. This role helps students utilize technology and digital platforms in learning. Although significant, challenges such as technology access gaps or digital literacy may affect the effectiveness of these roles in the field.

Finally, the teacher's role as an evaluator of learning connections (X_7) has a coefficient of 1.083, which shows that evaluation of the connections that students build in the learning process is also very important. This reflects that assessment in connectivistic learning focuses not only on the final outcome or memorized information, but also on how students build and use their knowledge networks.

Implication

Based on these findings, the study suggests some important implications that can be taken to improve the quality of connectivity learning in Christian schools in Denpasar. First, digital literacy training for teachers must be improved. Mastery of technology by teachers is key to maximizing the effectiveness of connective learning. Therefore, schools, governments, or Christian educational institutions need to develop more in-depth training programs related to the use of technological tools. This aims to ensure that teachers can make effective use of technology in the learning process, thereby creating a more inclusive and dynamic learning environment.

Second, collaboration and social learning need to be strengthened. Given the significant role of teachers as promoters of collaboration in connective learning, it is important for schools to provide platforms and methods that facilitate social interaction and cooperation among students. Activities such as online discussions, group learning, and collaborative projects across classes or across schools based on digital technology can help develop students' ability to work together and learn in a wider social network.

Third, it is necessary to optimize access to technology for all students. The gap in access to digital devices and the internet is an obstacle in connectivity learning. Therefore, Christian schools in Denpasar are advised to establish partnerships with local governments or non-profit organizations to ensure that every student has equal access to the technology they need. This will prevent the lagging of under-resourced students.

Fourth, a more flexible and student-centered curriculum should be developed to support connective learning. The curriculum needs to be designed in such a way that students can be more involved in finding and managing information independently. Teachers also need to be given the freedom to design learning that encourages independent and collaborative exploration, so that students can become familiar with the concept of adaptive lifelong learning.

Finally, it is important to improve connection-based evaluation methods. Learning evaluation focuses not only on the final outcome, but also on the student's ability to build and utilize a network of knowledge. Teachers are advised to use evaluation methods more often that assess students' connectivity skills in connecting various sources of information, thus encouraging them to become active and reflective learners.

Finally, follow-up research can also focus on comparative studies that compare the implementation of connectivity learning in different types of schools. By comparing Christian schools with other schools, both in Denpasar and in other regions, this study can identify the specific best practices and challenges faced by each institution in implementing connectivity strategies.

The results of this study show that the role of Christian teachers in Denpasar as a Promoter of Collaboration and Social Learning has the most significant influence in developing connectivity learning in the era of digital transformation. This finding is closely related to the value of Balinese local wisdom, especially the principle of *samasama braya*, which means brotherhood, togetherness, and mutual help in social life. The value of *samama braya* emphasizes the importance of harmonious relationships between individuals in the community, which is in line with the basic principles of connectivity that places **social** networks and collaboration as the center of the learning process (Siemens, 2005). In this context, Christian teachers not only play the role of facilitators of knowledge, but also as agents of building learning networks that foster solidarity, connectedness, and empathy among students. Thus, the integration between the values of *samama braya* and connectivist learning reflects contextual educational practices, where Balinese local values become the ethical and spiritual foundation for the implementation of digital pedagogy based on connectivity and collaboration.

Overall, further research focusing on these areas will make an important contribution to the development of connective learning, both in Christian schools and in other educational contexts, as well as aid in designing more inclusive and adaptive policies and practices in this digital age.

Conclusion

Based on the results of the research, it can be concluded that the role of Christian teachers in Denpasar in developing connective learning in the era of digital transformation has gone well and shown significant effectiveness. From the results of the regression analysis, it was found that the role of teachers as Promoters of Collaboration and Social Learning is the most dominant factor in supporting the development of connective learning. These findings reflect the alignment between Christian educational practices and the values of local Balinese wisdom, especially the principle of *samama braya* which emphasizes the spirit of brotherhood, togetherness, and collaboration in social life. The value of *equalizing braya* has been proven to strengthen the implementation of connectivity learning centered on social networks, connectivity, and collaboration between students. Thus, this study emphasizes that the integration between the role of Christian teachers and Balinese local wisdom is an important foundation in building a digital learning ecosystem that is contextual, collaborative, and rooted in local spiritual values and culture.

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