

The Effectiveness of Using Blended Learning on Increasing Students' Learning Independence and Critical Thinking Skills

Damayanti Nababan¹, Orde Koria Saragih², Rawatri Sitanggang³, Enjelina⁴, Irma Batubara⁵

¹ Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

² Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

³ Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

⁴ Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

⁵ Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

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ABSTRACT

This study aims to explore the effectiveness of the application of the Google Sites-based Blended Learning model in improving students' learning independence and critical thinking skills. With a qualitative approach and case study design, this study involved 12 students in the fourth semester of the Christian Religious Education Study Program at IAKN Tarutung who participated in the Curriculum Development lecture. This research uses a qualitative approach with a case study type that aims to explore in depth students' experiences, views, and beliefs towards the use of *Google Sites* in *Blended Learning strategies*. Data collection techniques were carried out through direct observation, individual interviews, and structured group interviews. Data analysis follows five stages of the cycle, namely *compiling*, *disassembling*, *reassembling*, *interpreting*, and *concluding*. The results of the study show that Blended Learning is able to encourage students to learn independently by managing time, choosing learning resources, and designing reflective learning strategies. In addition, students show improvements in critical thinking, such as openness to new ideas, the ability to make decisions, seek relevant information, and analyze problems systematically. However, some students still have difficulty in identifying the root of the problem as part of solving the problem. These findings indicate that Blended Learning is not only effective as a technical strategy, but also as a holistic pedagogical approach in 21st century skills development. This study suggests the need for training on independent learning strategies and strengthening problem-solving to optimize technology-based learning outcomes in higher education.

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Corresponding Author:

Damayanti Nababan

Institut Agama Kristen Negeri Tarutung, Sumatera Utara, Indonesia; damayanti.nababan@gmail.com

1. INTRODUCTION

The development of digital technology has brought significant changes in various sectors of life, including education. The concept of society 5.0, which is the integration of modern technology and human needs, provides both challenges and opportunities for the world of education. The role of humans as the center of innovation through the use of advanced technology to create new value (Akbar et al., 2023). In this context, education is required to adapt to these developments in order to produce adaptive and innovative human resources. Education is no longer only a process of knowledge transfer, but also a process of forming the ability to think critically and independently. 21st century competencies include critical thinking, creativity, collaboration, and communication skills (Arsal, 2015). Therefore, education in this era needs to adopt an approach that is able to grow these four competencies. Learning that is flexible, adaptive, and technology-based is a strategic choice. Therefore, the integration of learning models such as blended learning has become very relevant. This model allows learning to take place not only in the classroom but also in cyberspace, which is in line with the needs of today's digital generation.

Conventional education, which is still dominant in using the lecture method, shows limitations in fostering students' learning independence and critical thinking skills. This method makes students tend to be passive and only rely on the information conveyed by the lecturer in class. Learning should be social and collaborative and involve active interaction between educators and learners (Anjaeni, 2021). If this approach is not adopted, then the potential for students to develop high-level cognitive abilities will be hampered. The digital era requires learners to actively seek information, think analytically, and evaluate various learning resources. The importance of the active role of the individual in building knowledge through experience (Wang et al., 2023). Thus, it is necessary to transform the learning approach from teacher-centered to student-centered. The blended learning model answers this need by combining the advantages of face-to-face and online learning. This model is not only flexible in time and place, but also enriches learning methods that suit different learning styles. Therefore, the application of blended learning is very relevant to equip students with independent learning and critical thinking skills.

The blended learning model provides space for students to learn more independently with access to extensive digital resources. Blended learning facilitates the transition from traditional learning to active and collaborative learning (Bahtiar & Ibrahim, 2022). Students can explore the material more deeply through e-learning and discuss it directly with lecturers and peers. This process helps build a stronger conceptual understanding and hone critical thinking skills. In addition, this model provides freedom for students to manage their study time according to their needs and pace. The theory of self-directed learning states that adult individuals learn more effectively when they have control over their learning process (Timmermans, 2023). Blended learning secara implisit mendorong self-regulated learning karena menuntut mahasiswa untuk berinisiatif, merencanakan, dan mengevaluasi proses belajar mereka sendiri (Sharma & Jones, 2019; Bahtiar & Ibrahim, 2022; Bariyah & Imania, 2018; Mabruroh et al., 2023). Ini memperkuat kemandirian belajar, yang merupakan indikator penting dalam kesiapan menghadapi tantangan dunia nyata. Maka, model ini sejalan dengan paradigma pendidikan modern yang menekankan pembelajaran sepanjang hayat (lifelong learning). The application of blended learning is not only a technical strategy, but a holistic pedagogical approach.

The importance of critical thinking in the academic world is inseparable from the need of modern society for graduates who are able to analyze problems and make informed decisions. Critical thinking is reflective and rational thinking that is focused on determining what to believe or do (Doleck et al., 2017). In a college setting, critical thinking skills help students assess arguments, recognize biases, and construct opinions logically. Blended learning provides a learning context that stimulates students to engage in discussions, complete case studies, and evaluate information from a variety of sources. All of these activities demand critical thinking skills. Online learning also opens up opportunities to analyze multimedia content that is more complex than just listening to lectures (Hussen et al., 2021; Lestari et al., 2022; Marin & Bocoş, 2021; Agbo et al., 2021; Tsai & Tsai, 2017). Students are required to

understand the material in various formats, such as videos, scientific articles, and discussion forums. Critical thinking involves the ability to clarify, interpret, and infer information appropriately (Basha et al., 2016). Therefore, blended learning is an effective medium to foster critical thinking. This varied learning environment allows students to experiment with different ways of thinking.

Learning independence is an important element in the success of higher education, where students are required to be active and responsible for their own learning process (Mahayukti, 2018). An independent learner is an individual who proactively recognizes learning needs, formulates goals, finds resources, and evaluates learning outcomes (Hardiansyah et al., 2024). In the blended learning model, students are given a great opportunity to practice learning independence through online learning that is flexible and does not depend on the physical presence of lecturers. They can access materials, set schedules, and choose a study method that suits personal preferences. This activity creates an authentic and meaningful learning atmosphere. In addition, lecturers act as facilitators who guide students to evaluate and reflect on their learning process. This model encourages students to use metacognitive learning strategies such as planning, monitoring, and self-regulation. Success in self-paced learning is closely related to mastery of metacognitive strategies (Hidayati, 2017). So, blended learning also supports the development of affective and cognitive dimensions in learning. The combination of direct interaction and independent access strengthens the development of a more responsible learning personality.

Blended learning has been implemented in various higher education institutions in response to the challenges and needs of the times. Students who participated in blended learning showed higher levels of satisfaction and learning outcomes than traditional methods (O'Byrne & Pytash, 2015). In Indonesia, the implementation of blended learning has also begun to develop since the COVID-19 pandemic which forced a change in the learning paradigm. Despite the many obstacles faced, the adoption of this model provides new insights into the importance of flexibility in learning. However, the effectiveness of the implementation of blended learning is highly dependent on the readiness of infrastructure, lecturer skills, and student digital literacy (Ariawan, 2024). Therefore, training and assistance in the use of learning technology are crucial. Students who are used to conventional learning need to be accompanied in order to adapt to a more autonomous learning system. Lecturers as facilitators must also be able to design integrative learning activities between face-to-face and online sessions. The goal is to achieve success in increasing critical thinking and learning independence. With the right system support, blended learning is able to create meaningful and sustainable learning experiences.

A field study conducted on students of the IAKN Tarutung Christian Religious Education Study Program shows that traditional methods have not been able to optimize the potential of students. Of the 35 students, only a small percentage were active in class discussions and were able to compile lesson plans independently. This condition shows that there are limitations in the aspects of critical thinking and learning independence. High-level thinking includes analysis, evaluation, and creation, all of which must be honed through active and diverse learning strategies (Abdullah et al., 2017). If you only rely on lectures, this potential cannot be developed to the fullest. Therefore, blended learning can be an alternative that provides more opportunities for students to explore knowledge independently. Through online assignments, discussion forums, and interactive content, students are invited to think and make their own decisions. They can also learn from their peers through peer-to-peer discussions that take place on the e-learning platform. Thus, blended learning is not only about the media, but about changing the learning paradigm.

Changing the learning approach towards blended learning requires an active role from all campus components, including institutional support and strengthening digital learning policies. Digital transformation in higher education requires a learner-centered learning design with planned technology integration (Imaniyati et al., 2024). The Faculty of Christian Education at IAKN Tarutung already has basic capital in the form of e-learning facilities and sufficient technological devices. Many students have brought digital devices such as laptops and used the internet network to support learning

activities. Therefore, the application of blended learning has great potential to improve the quality of the learning process. However, it must be ensured that the content provided in the online platform is of equal or even better quality than face-to-face material. It is also necessary to provide a meaningful interaction space to maintain social and emotional relationships between students and lecturers. Along with that, periodic evaluations are needed to assess the effectiveness of the blended learning strategy implemented. This approach will help the campus adapt learning to global dynamics.

In the context of globalization and digitalization, students are required to be active learners who are able to think critically and be responsible for their learning process. The application of blended learning is not only a technical solution, but also a pedagogical strategy that is in accordance with the challenges of the digital era (Ariawan, 2025). This model can be a means to grow student agency, which is the ability of students to direct and influence their learning process. Self-regulated learners are learners who motivate themselves, regulate learning behavior, and evaluate learning outcomes independently (Al-Hatem et al., 2018). With the support of lecturers as facilitators and a supporting system, blended learning opens up a more democratic and dynamic learning space. Students have greater control over what they learn, when, and how. This is very important in developing future competencies needed in the world of work. Therefore, the effectiveness of the blended learning model on learning independence and critical thinking is the main focus of this study. This research is expected to contribute to the development of a more contextual and relevant learning model.

Based on all of the above explanations, the purpose of this study is to find out and analyze the effectiveness of the use of blended learning in increasing students' learning independence and critical thinking skills, especially in the context of learning the PAK Curriculum Development course at IAKN Tarutung. This study aims to provide empirical evidence regarding the contribution of blended learning strategies to the transformation of learning processes that are more adaptive, participatory, and reflective. Especially in the context of learning the PAK Curriculum Development Course at IAKN Tarutung, where the learning approach is still dominated by traditional methods. With the transition to blended learning, it is hoped that students can be more active, independent, and reflective in the learning process. This research is also a form of contribution to the development of Christian religious education that is adaptive to the era of society 5.0. Through quantitative methods or mixed methods, the effectiveness of blended learning strategies can be tested systematically. It is hoped that the results of this research can be used as a reference in the formulation of learning policies at the institutional and national levels. In addition, this research will enrich the literature on the influence of blended learning on critical thinking skills and learning independence. Thus, this research has high theoretical and practical urgency. Future learning models must integrate technology, pedagogy, and learner needs holistically. Therefore, the title "The Effectiveness of the Use of Blended Learning on Increasing Student Learning Independence and Critical Thinking Skills" is very relevant to raise.

2. METHODS

Types and Approaches to Research

This type of research is qualitative research with a case study approach. This approach was chosen because the focus of the research is to explore in depth the experiences, views, and beliefs of students on the use of *Google Sites* in the Blended Learning strategy in the PAK Curriculum Development course at IAKN Tarutung. Case studies are used because they are able to capture the complexity of participants' behaviors in an actual context without researcher intervention. Case studies are suitable for exploring contemporary events and relevant behaviors that the researcher cannot control (Twarog, 2023). This research is exploratory and seeks to reveal in depth the perceptions and experiences of participants in the context of 21st century learning.

Location and Research Subject

This research was carried out at IAKN Tarutung, especially in the Christian Religious Education Study Program (PAK). The research sample is a factor of the number and characteristics possessed by

the population (Lenaini, 2021; Benakli et al., 2017). The research subjects were fourth semester students from groups C and D who took the Curriculum Development course, with a population of 85 people. However, for in-depth data collection, the researcher selected 12 students as a sample through the cluster random sampling technique. Subject criteria include: active students at IAKN Tarutung, coming from the PAK Study Program in the fourth semester, being a member of group C or D, and having a high (≥ 3.5), medium (3.0–3.4), or low (≤ 2.9) GPA to maintain the representation of academic characteristics.

Data Collection Techniques

- Direct observation of blended learning activities in the classroom, to obtain authentic data from social situations that occur naturally (Morgan et al., 2017; Husnaeni, 2016).
- Individual interviews with 12 selected students were conducted to explore their personal experiences, perceptions, and views on the use of Google Sites.
- Structured group interviews were conducted to gain a shared perspective and the dynamics of social interaction in the professional learning community. The combination of these three techniques allows data triangulation to increase the validity of research results.

Data Analysis Techniques

- Compiling by collecting and organizing data from interview transcripts, journals, and observation sheets.
- Disassembling by breaking the data into small pieces (units of information) and labeling the initial code.
- Reassembling is rearranging data in a new thematic structure based on emerging categories or meanings.
- Interpreting by interpreting the patterns or meanings of data that has been reconstructed.
- Concluding by drawing conceptual conclusions from theoretically and practically relevant data findings.

3. FINDINGS AND DISCUSSION

Findings

The effectiveness of the use of Blended Learning in increasing learning independence and critical thinking of each student in this study has several similarities as well as differences. The data showed that the twelve resource persons experienced an increase in learning independence and critical thinking after participating in Blended Learning even though they themselves had different preferences and experiences related to Blended Learning before, so this had an effect when learning with the Blended Learning Strategy. This is done. Of the 12 students, as many as 4 students have not had experience participating in Blended Learning and as many as 8 students have participated in learning using the previous Blended Learning Strategy as described in table 2 below.

Table 2.
Description of Research Subject/Student

Yes	Name	Age	Regional Origin	School Origin	Learning Experience with Blended Learning	GPA
1	Yuni	21 Years	Lintong Nihuta	SMAN 1 Pagaran	Ever	3.66
2	Agnesia	19 Years	Stuttgart	SMAN 1 Gebang	Never	3.00
3	Gusti	19 Years	Squirt	Private High School Preparatory Aek Nabara	Ever	3.64

4	Beautiful	21 Years	Aek Nabara	SMAN 1 Bilabulu	Never	3.00
5	Ruth	21 Years	Riau	SMAN 1 Bandar Petalangan	Pernah	3.36
6	Kharista	20 Years	Pematang Siantar	SMAN 5 Pematang Siantar	Pernah	3.34
7	Said	21 Years	Coal	SMKN 1 Air Putih	Never	3.76
8	Maria	20 Years	Padang Sidimpuan	SMAN 2 Padang Sidimpuan	Pernah	3.60
9	Eka	19 Years	Riau	HKBP Private High School 1 Tarutung	Pernah	3.36
10	John	20 Years	Sibintang	SMAN 1 Sosorgadong	Pernah	3.36
11	Anggun	20 Years	Samosir	SMK NEGERI 1 Simanindo	Pernah	3.20
12	Habel	21 Years	Toba	SMAN 1 Borbor	Never	3.18

The Effectiveness of Using Blended Learning to Increase Learning Independence

The data shows that all students each individual have the traits and ability to do independent learning. They have their own way to empower themselves in independent learning by utilizing the materials in Google Sites. They even realize what can help them focus on studying, when to study, how effective situations are to study and what learning resources they need. As Yohana said in an individual interview that stated,

"I learn by listening to explanations from lecturers, then reading the material in Google Sites according to my needs, then I will record back the material that I understand in my notebook"

This explains Yohana's initiative that she is able to learn by listening from learning sources (lecturers), reading from books, and writing down what she understands in notebooks. In more detail, one of the students was able to explain in detail how he diagnosed his learning needs during Blended Learning by describing,

"I am the type of person who does not like to be regulated in learning, in the sense that I study according to my own wishes or will. I am the one who decides when and where I will study. So when in class I always try to be active in learning, because I believe it will trigger my activeness in thinking. When I'm outside of class, I'm more inclined to study in my quiet time to access the learning resources available within Google Sites."

One of the students clearly stated what he needed to make his learning more optimal by saying, *"In my opinion, what is needed so that learning can be maximized is by having a strong motivation to learn and also supported by the required learning media."*

Furthermore, based on the analysis data, all students who take part in Blended Learning learning using Google Sites have their own abilities or initiatives to find out and determine what their respective learning needs are.

Talking about learning independence means talking about the ability to formulate learning goals. In this regard, all speakers were able to interpret learning objectives based on their respective understandings where the data collected concluded that the learning objectives are to improve cognition (science/insight) and increase affective (behavior/deeds). As conveyed by Ayu by stating,

I learned to sharpen my spirituality, to know what I didn't know became to know, and of course there had to be a change in my behavior."

The improvement of the ability of resource persons in their learning independence is also reflected in their ability to identify learning resources, both in the form of humans and goods/materials. All speakers understand what a learning resource is and can confirm when something can be said to be a learning resource. The resource person also mentioned various types of learning resources and realized

that the use of Google Sites in Blended Learning is also a learning resource for them as confirmed by Yuni through her statement,

"In my opinion, learning resources are everything that provides knowledge. So in my opinion, it's not only books, lecturers, and the surrounding environment but technology media such as Google Sites that contain material on counting effective weeks and other materials."

Furthermore, learning independence is also inseparable from the ability to choose and implement learning strategies that are in accordance with the resource persons. In terms of choosing this strategy, it was found that most of the interviewees were not able to determine one of the strategies that suited them, so it was very contradictory to the characteristics of learning independence. They don't have a specific strategy to use when they learn. However, 5 out of 12 people were able to choose what learning strategy suits them in their learning activities. The strategies are inquiry-based learning, discussion, problem-based learning, and independent learning. Anggun admitted that he did not have a specific strategy because he considered that the essence of learning activities was the level of concentration by saying,

"If there is no specific strategy that I use for my daily life, because I think in all things I have learned to use strategies, depending on the focus I am learning and what my learning goals are."

How Blended Learning can increase students' learning independence can also be seen through their ability to evaluate their learning outcomes. All the speakers stated that they were able to evaluate their learning results in their own way. In general, the evaluation of learning outcomes they do focuses on comparing UAS (Final Semester Exam) scores to GPA (Cumulative Achievement Index), but through Blended Learning learning they can evaluate their learning outcomes in a smaller and measurable scope. This happens because in blended learning, the material they have learned independently online on Google Sites will be confirmed in a face-to-face meeting in the classroom. Their ability to answer questions to practice what the lecturer tells them is a measure of the extent to which they have mastered the material they have learned. No wonder Abel said that,

"I evaluate by showing my activeness in the learning process in face-to-face classes. For example, when my lecturer asked me a question about an effective week and I was able to answer the question correctly, it meant that my independent learning was successful."

The material learned by students online through Goggle Sites can be checked at the level of understanding when face-to-face classes are conducted. So that Blebbed Leranng itself is very effective in evaluating the learning outcomes that have been carried out by students.

The Effectiveness of Using Blended Learning to Improve Critical Thinking

The increase in Critical thinking through the use of Blended Learning was confirmed by the researcher based on 13 characteristics of people who have critical thinking skills (Sharma & Jones, 2019; Bell & Loon, 2015). Based on the data that has been analyzed, the interviewees have the belief that they have the first characteristic of people who have the ability to think critically, namely open-mindedness. Through blended learning, they have the experience to learn in new ways and learning resources. Naturally, if they are not open-minded people they will have a hard time accessing and receiving learning that is different from their habits. Yohana said,

"I have an open mind because I think to understand everything that happens in the surrounding environment, including in this Curriculum Development Course, I need an open mind for new knowledge and experiences for me."

Furthermore, open-mindedness can also be seen in their ability to accept input or criticism that is contrary to their own opinions. All speakers were able to receive different inputs with their own opinions even though they faced different ways. Some of the ways they use are by positioning themselves on other people's situations and perspectives, selecting positive and negative inputs first, receiving input according to conditions and situations, trying to appreciate it and make it a consideration, responding to it maturely and finding solutions together, and asking for an explanation of the input given to be confirmed.

Based on the data that has been analyzed, it can be concluded that the resource persons consist of people who can take attitudes and decisions. There were 2 out of 12 speakers who stated that they had difficulties in making decisions, this happened because one speaker had to first look far at the situation and conditions related to the decision so that it took a long time while one speaker had to involve others in making decisions. The speakers also had different strategies in taking this attitude.

They consider the whole situation first, such as considering the benefits of making decisions, considering with others, considering whether there is progress or improvement, considering the benefits of making decisions, considering the risks that may occur, and considering whether the decision brings positive or negative results. Maria, explaining how she had the experience of taking a stance using Google Sites through this Blended Learning strategy,

"On Google Sites there are several questions and cases at the end of the material of each meeting. I think if the answer to the question or the reason for the case is clear enough and there is evidence to support what I have found, then I will take a stand on what is going on. Whether pro with the case or not for example

In this case, Maria is able to take a stance after considering the situation complemented by the presence of sufficient evidence and reasons.

The resource persons also have characteristics that show the ability to equip themselves with information. They love to learn new things and investigate problems by equipping themselves with enough information. This was conveyed by Dedi who experienced how Blended Learning can train him to equip himself with information by saying,

"Every time I equip myself with information related to the problem, so that I will be able to easily investigate the problem and find a solution. For example, like how to calculate weeks effectively, at first I was confused if I only read the material on Google Sites and then because there is an explanation video provided as well, I watched it to get clearer information. Finally, I checked the existing power point again and downloaded it.

Dedi's explanation also showed that he and the other speakers had the ability to find as much truth/accuracy as possible. It is not enough if the information that has been collected is a lot in terms of quantity but does not have quality. Therefore, the correctness and accuracy of the information that has been collected must also be ensured. Yuni said,

"I have to find the correct information first because if the information I get is not correct, I am the one who is disadvantaged in solving a problem or a question or case study".

The data further shows that all the speakers solve the problem in different ways as well. Some of the ways they do it are to investigate the root of the problem first, equip themselves with information related to the problem, look for evidence and then follow up, analyze the root of the problem, and identify evidence. What they have in common lies in the systematic execution of the problems they face. The order in which they do it is to identify the problem first, look for evidence and then make a solution. When the researcher asked the resource persons what concrete examples they experienced when participating in learning with Blended Learning, Yuni explained,

"For example, for tomorrow there is a curriculum development course, so I will see at the RPS for tomorrow what material will be discussed. Ohh, about Prota. So that evening I have prepared and tried to read things related to the annual program and how to arrange it. So that the next day when the lecturer explains and there are questions suddenly raised, especially if they are raised for me, I can answer.

Regarding finding alternatives to solve the assignments/problems/cases that they found in the learning, the speakers stated that using the existing alternatives is a must. Although they already have a complete learning resource to find evidence and information, other alternatives such as journals and scientific literature are no less important. This was confirmed by Kharista by saying

"Yes, because using alternatives is very important. Especially in this Curriculum Development Course, for example, the development must be in accordance with the times, changes in society must

also be sought so that the development of the curriculum becomes better. So yes, it must be accompanied by journals, books, and scientific literature.

In line with Kharista, Yohana and other speakers also had a similar answer,

"Yes, of course. Because, for the creation of curriculum development course assignments, it is very necessary to refer to journals or scientific papers which certainly add new information to complete the assignment of this curriculum development course."

An interesting thing arose after the researcher found that there were characteristics of Critical thinking that were not so developed or increased in the resource persons after participating in blended learning. As many as 8 out of 12 resource persons were unable to find the reason/cause of a problem when Blended Learning learning was implemented. The cases/questions/problems in question are questions that already exist in the Google Sites Curriculum Development Course to be answered and solved by students themselves after they finish listening to the video and reading the material independently. Their answers show that they are not confident in solving problems and not all problems can be solved. As Ruth explained,

"Yes, I am able to find the main reason or cause in a case but it depends on that problem as well. "

The same thing was also conveyed by Agnes,

"I can't afford to solve those cases alone, I have to have friends to solve a problem."

In contrast to the ability to find causes/reasons, the speakers experienced an increase in their ability to remember the main / basic things. It can be said that the basic thing is the main idea or keyword in a problem. All of the speakers claimed that they always prioritized remembering these basic things to solve problems. As stated by Eka,

"Yes, I will remember the main thing first because it will make it easier for me to solve problems."

This is strengthened by Dedi who said,

Yes, I always remember that basic thing and understand where I should start solving a problem and what is the basic thing in starting my action."

In addition, in solving problems, the speakers also use credible sources. All of the speakers admitted that having accurate and reliable sources is very important in solving problems so that there are no mistakes in the future. Anggun responded with a statement,

"Yes, it must be and it must be credible because if it is not trusted, maybe in the future there will be harmful things, there will be negative things that will happen if it is not believed."

If someone is always trying to be relevant to the main idea, then it means that they have the skills or ability to think critically. In this case, the speakers acknowledge that they have these skills by always trying to match or be relevant to the main idea of a conversation. They try to put themselves in a position to talk that is relevant to the main idea so that the conversation is meaningful. For Dedi himself, providing arguments and responses that are in accordance with the main idea is very important,

"Yes, in a conversation I always try to put my position in a position that is appropriate and relevant to the main idea of the conversation, which means that my arguments and the responses I give are based on the main idea itself."

As for Eka, relevance to the main idea can lead the conversation to a meaningful conversation that says,

"Of course, I will be relevant so that the conversation has a clear meaning and there is nothing convoluted or disconnected."

In Critical thinking, there is one characteristic that involves a person's meta-analysis ability called sensitivity. He or she must be sensitive to the feelings, level of knowledge, and ability level of others. In other words, the ability to map a person's situation is a skill that shows a person's Critical thinking ability. Eleven speakers confirmed that they had this ability, while one source stated that they did not have this ability. The researcher explored the cause of one of the speakers' inability and found that the speaker chose to focus only on himself and not compare himself to the people around him. Resource persons who have this sensitivity ability stated that this ability helps them to interact and relate better with others. As Dedi recounted his experience,

"Yes, I am a person who pays attention to the things around me. In socializing, I always analyze the personality and potential of the people around me first. So that I can adjust in acting or behaving. So I have to find out what the feelings of the people around me are, as well as the attitude of knowledge and the level of ability they have. That way I can position myself like when I am with them.

The experiences of the resource persons about the characteristics that appear in them confirm how the use of blended learning has the effectiveness of increasing learning independence and critical thinking of Semester IV students in the PAK curriculum development course at IAKN Tarutung so that the formulation of the first problem in this study can be answered.

The use of Blended Learning can increase Learning Independence and Critical thinking

The data that has been analyzed also shows in detail the increase in learning independence and critical thinking skills experienced by students during learning and after learning is carried out. Table 3 shows what the speakers experienced after learning using Google Sites in this Blended Learning.

Table 3. Increased Learning Independence and Critical Thinking Through Google Sites		
Sources	Increased Learning Independence	Critical thinking enhancement
Dedi	Easier to understand the subject matter	Able to solve problems faced in learning
	Able to practice theory at the next meeting	Able to analyze the argument of the answer to develop knowledge
		Personally, it is formed to deepen the material because it is equipped with many resources in the learning process
Yohana	Become more creative, purposeful, and more passionate as a result of using Google Sites	Making thinking as a student more directed, open can even create new thoughts
	Can create something new adapted to the existing syllabus and tasks that must be done.	
Abel	Get more excited because you can easily learn through Google Sites	Be enthusiastic about solving an existing problem.
	The syllabus created by lecturers is accessible, learning materials are available, and assignments are easier to do	
Mary	The intention to do independent learning increases because it can be easily learned through Google Sites.	Be able to solve an existing problem through understanding and observation
	The available syllabus makes it easy to know the topics of discussion that will be discussed at the next meeting	
One	Learning independence increases because learning using Google Sites can get a lot of material	There is a desire to find out material that is not understood and repeat it constantly so that during face-to-face learning, the practice can be done.
	The assignments made on geogle sites make the curiosity to do it increase.	

Graceful	Be more motivated and enthusiastic about independent learning.	Getting more challenged to come up with new ideas and becoming more challenged in understanding the next material
Kharista	More creative and targeted as the material is available	Being open mind can even create new thoughts
Gusti	The emergence of the desire to do independent learning because it can be easily learned through Google Sites.	Can learn to solve an existing problem through understanding and observation
Ruth	Be able to develop the tasks given by the lecturer themselves	Able to add insight and will not conclude opinions or suggestions carelessly
Beautiful	Made easier to learn due to the complete resources	Equip yourself to think critically about learning materials
Yuni	After learning to use Google Sites, your free time before bed is used to study.	Want to find out more about the material or something that is not right
Angnesia	Be able to better understand each material	Want to repeat the material if there is something you don't understand

Table 3. shows that the use of Google Sites as a medium as well as a learning resource in Blended Learning can answer the formulation of the second problem in this study and confirm that the use of Blended Learning can increase Learning Independence and Critical thinking Fourth semester students of the PAK curriculum development course at IAKN Tarutung. The speakers even stated that the limited time in face-to-face learning is actually a problem so that if there is no learning resource such as Google Sites, then the material will not be able to be mastered by all, as stated by Anggun,

"In my opinion, if we understand the material only in class, it is very difficult because of the limited time and the large number of people. So by using these geogle sites it can help a lot and provide new things and make us more creative with more advanced thinking. Especially by understanding the material about the effective week, Prota and Prosem in the class are difficult to understand in a short time".

Discussion

The Effectiveness of Blended Learning Strategies Through Google Sites

The data that has been analyzed shows the effectiveness of Blended Learning in the speakers so that they experience increased learning independence and critical thinking. This effectiveness is seen from several indicators, such as students' ability to manage their own learning schedules, actively seek additional resources beyond the provided materials, engage in reflective discussions, and demonstrate improved reasoning in analyzing and solving contextual problems presented during the course. In addition, students reported greater confidence in expressing opinions, both orally and in writing, as well as increased initiative in collaborative tasks traits that are strongly associated with critical thinking and autonomous learning behaviors. This is inseparable from the role of Google Sites as a learning medium as well as a learning resource for this Blended Learning. The speakers had different experiences related to the Blended Learning learning that was followed before. Students who have had previous experience with Blended Learning mostly state that they still prefer learning that is carried out in person/offline/ face-to-face (Sharma & Jones, 2019). But after they took a class that involved Google Sites , they had a different opinion. The Lord declares,

"The topic of effective weeks, prota, and prosem is quite difficult to really understand. So to be able to understand it I have to learn independently through Google Sites. I'm very lucky that the material is on Google Sites."

The researcher realizes that the selection of learning media and resources in implementing the Blended Learning Strategy is very important. Because the selection of inappropriate learning media and resources is not effective in achieving learning goals. This is in accordance with the definition of learning media as an educational means or tools that can be used as an intermediary in the learning process to increase effectiveness and efficiency in achieving teaching goals (Huda et al., 2018; Maharani & Apriandi, 2017). Although in general, Blended Learning uses E-Learning or LMS as a learning medium and learning resource, Google Sites as one of the supporting software (in the form of a website) is also very effective in achieving learning goals because it is equipped with learning media in the form of visuals and audiovisuals.

In this case, it does not mean that Google Sites is superior to other software, it's just that the content displayed on this website is able to attract the attention of students and absorb the information contained in it. As emphasized by experts, there is no one medium that is the best for all purposes because one medium may only be suitable for certain instructional purposes, but may not be suitable for others so that the selection of learning media and resources that are suitable for students can support the success of successful Blended Learning (Wahyudi et al., 2018).

The effectiveness of Blended Learning using Google Sites lies in the completeness of the material in it as a learning resource and Google Sites content that attracts students' attention. This is also confirmed by other research that suggests the attractiveness of Google Sites products that are not boring and increase students' learning independence (Samosir & Rahmadi, 2025; Maharani & Suprpto, 2018). If students already have a sense of interest and interest in learning, then they will be stimulated to focus their attention and be able to absorb the information presented well.

Improving Students' Learning Independence and Critical Thinking Skills

As described in the previous section, the speakers explained their experiences in improving Learning Independence and Critical Thinking in detail. All speakers experienced improvement and development of skills in independent learning and critical thinking (Dwyer et al., 2017). However, the characteristics of learning independence and critical thinking that appear in the resource persons are not the same and not all characters can appear in them.

In learning independence, the most characteristic that does not appear according to the experience of the resource person is the ability to choose and implement learning strategies that are suitable for him. Learning strategies are methods used by students to learn (Sulemanowski, 2022). Individually, a learning strategy means a method to achieve meaningful learning (Clarke & Roche, 2018). To recognize and understand the concept of mapping, it is necessary to understand the diverse learning models, especially those that apply in the world of higher education known as adult learning (Pan et al., 2018). The diverse ways of learning can be divided into two main parts, namely the way of learning that has been structurally prepared by the educational institution and the way of learning based on individual characteristics. So it can be said that students' lack of understanding of the available learning models is the main trigger for their inability to choose and implement learning strategies that are suitable for them.

A characteristic of critical thinking that does not appear in many speakers is the ability to remember original and basic interests. In this ability, 6 people out of 12 resource persons stated that they were unable and had difficulty finding the main reason/cause of the problems they faced. In other words, they are unable to find the root of a problem. If a person is not able to find the root of a problem, it can be said that a person does not have problem solving skills, because problem solving is one part of the thinking process in the form of the ability to solve problems (Hardiansyah et al., 2024). The four basic steps of problem solving consist of finding out and understanding the problem, determining the root of the problem, finding and choosing a solution, and applying solutions and evaluations (Cansoy

& Turkoglu, 2017). Thus, although the speakers have an increase in critical thinking which is characterized by the emergence of critical thinking characteristics, they still need a way to improve their problem solving skills, especially in finding the root of the problem.

The results showed that the use of Blended Learning strategies through Google Sites contributed significantly to the improvement of students' learning independence and critical thinking skills. This is reflected in student testimonials that show the encouragement of independent learning when facing difficult topics and increased confidence in expressing opinions. However, a critical analysis of these findings shows that despite the improvements, not all aspects of independent learning and critical thinking develop equally. For example, most students still have difficulty in determining appropriate learning strategies and in finding the root of problems in critical thinking activities. This shows that although learning media has been interesting and informative, in-depth pedagogical interventions are still needed to cultivate these aspects comprehensively.

The purpose of this study is to explore the effectiveness of the Blended Learning strategy through Google Sites in increasing students' learning independence and critical thinking skills. The findings of the research are in line with these goals, with data showing that most students experience positive development, especially in the aspects of active participation, independent study time management, and reflection in learning. However, the data also revealed limitations in the ability to choose learning strategies and analyze problems in depth. Therefore, these findings directly answer the purpose of the research by providing a comprehensive overview of the dimensions of effectiveness that have been achieved and areas that still need improvement.

The analysis in this study is still descriptive and has not fully associated empirical data with previous theories and studies. In fact, some theories such as the theory of *Constructivism* (Piaget & Vygotsky) and *Self-Directed Learning* (Knowles) are very relevant to explain the relationship between digital learning media and students' cognitive and affective development. These findings strengthen the argument that *Google Sites* as an interactive visual medium can encourage students' interest and motivation to learn. The improvement of critical thinking skills is also accompanied by the strengthening of systematic problem-solving skills, in this study students are not fully able to find the root of the problem independently. Therefore, it is necessary to strengthen reflective learning strategies and explicit training on problem solving to maximize the effectiveness of blended learning.

4. CONCLUSION

This study aimed to explore the effectiveness of blended learning through Google Sites in enhancing students' learning independence and critical thinking skills in the Curriculum Development course at IAKN Tarutung. Based on the data collected and analyzed, it can be concluded that blended learning implemented through Google Sites is effective in supporting the development of both competencies. Students demonstrated increased self-regulation, initiative in learning, and engagement in critical reflection, although some aspects—such as selecting appropriate learning strategies and identifying the root of problems—remain underdeveloped. The findings of this research have practical implications for the design of digital learning environments in Christian Religious Education. Educators are encouraged to integrate flexible and interactive platforms such as Google Sites, not only to deliver content but also to stimulate higher-order thinking and learner autonomy. Future research should focus on the development of instructional models that explicitly train students in learning strategy selection and systematic problem-solving. In addition, longitudinal studies may be conducted to examine how these competencies evolve over time in blended learning settings.

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