

## The Impact of Implementing Hybrid Learning on Flexibility and Quality of Learning

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### ABSTRACT

**Background.** The implementation of hybrid learning is a learning method that refers to a learning method that combines or combines face-to-face and online-based learning. By implementing hybrid learning, it is possible for students who have limited infrastructure to study without coming to school

**Purpose.** This research was conducted with the aim of determining the flexibility and quality of learning by implementing hybrid learning. Apart from that, it is also possible to find out about the learning experiences that have been produced through the hybrid learning process.

**Method.** The method used in this research is a quantitative method. This method is a way of collecting numerical data that can be tested. Data was collected through distributing questionnaires addressed to students. Furthermore, the data that has been collected from the results of distributing the questionnaire will be accessible in Excel format which can then be processed using SPSS.

**Results.** From the research results, it can be stated that the impact of implementing hybrid learning can help optimize the use of technology in education, so that learning materials can be developed that are more flexible and high quality, and teachers can choose appropriate teaching methods that suit student needs.

**Conclusion.** From this research, it can be concluded that the impact of implementing hybrid learning can make it easier to carry out the learning process. Where the learning process is not only carried out face to face, but can be carried out online by utilizing existing technology.

### KEYWORDS

Flexibility, Learning, Quality

### INTRODUCTION

The development of information and communication technology in the current digital era is a phenomenon called revolution (Austin et al., 2023). Changes that occur due to the capabilities and potential of information and communication technology that enable humans to communicate and meet their needs (Zhao et al., 2023). By developing it, humans can now overcome several limitations in relationships with each other, such as distance, time, number, capacity, and speed (Barac & Vulić-Prtorić, 2023). With increasingly rapid technological

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advances, teachers must be able to use electronic-based learning programs. Teachers can use e-learning as a medium or system for teaching. Developing one's potential, achieving maturity, and cultivating a positive attitude is known as education. The learning process involves students, educators, educational materials, educational tools and methods, and the educational environment (Kelleher et al., 2023). Students experience interactive learning actions during this process, which results in an increase in students' mental abilities and teaching actions that provide lessons to students (Razmjoei et al., 2023). Education is carried out consciously by families, communities and the government through guidance, learning and/or training that occurs both at school and outside school. The learning process should be held in an interactive, inspiring, fun way, motivating students to participate actively, and providing sufficient space for initiative, creativity and independence in accordance with the students' talents, interests and physical and psychological development (Ramadhani et al., 2023).

Process Learning at school is usually not completely carried out face-to-face. With the development of the times and technology nowadays, the learning process can be done online, or other learning that is more student-centered (Huang et al., 2023). However, the face-to-face learning process also needs to be carried out. Because the face-to-face learning model is the easiest learning model to be used by teachers, the implementation of this model still requires involvement in the implementation of learning (Chougule et al., 2023). However, teachers also have to be more innovative and more creative when integrating learning models.

In the world of education, digital influence is increasingly felt along with the shift from conventional face-to-face education to more open education (Bennett & Smith, 2022). Hybrid learning is a conventional learning model with other learning models, such as online learning. The learning process that combines these two learning models is very effective to use, especially in the current digital era (Shikano et al., 2023). Thus, implementing hybrid learning can also require sufficient digital skills to help people who use technology in carrying out the existing learning process (Dohiem et al., 2022). Skills in using technology are not only mastered by teachers, but students must also have skills in using it.

Virtual meetings between teachers and students are another type of hybrid learning. Where students and teachers can be in different places, but can still interact with each other, such as asking, answering and giving each other criticism (Da Silva et al., 2022). Hybrid learning, also known as blended learning combines one or more learning models or approaches (Haas et al., 2022). The presence of hybrid learning can have a positive impact on the implementation of the learning process. Teachers and students are not limited in space and time to dig deeper into learning material (Imants et al., 2020).

Hybrid learning can also allow the learning process to be carried out online. Online or online learning can help reduce obstacles that occur in the learning process (Xie et al., 2023). In the current era of digital development and progress, implementing hybrid learning is one of the best learning models to implement (Hameed, 2023). Implementing hybrid learning also allows students to develop their individual skills while maintaining social interaction in the classroom. Therefore, this learning system allows students to participate more actively in the learning process, while the teacher acts as a facilitator in the learning process (Liu et al., 2023).

Flexibility and quality of learning are two important aspects in education. Learning flexibility means that teachers and students have the freedom to choose learning methods that suit each student's needs and interests (Al-Humaiqani & Al-Ghamdi, 2023). This allows for a better response to individual student needs and interests. Meanwhile, the quality of learning is part of the quality of education which shows an important commitment to improving the overall quality of

education(R. Islam et al., 2022). The curriculum is structured depending on how students understand the material, master skills, and become critical thinkers. Quality learning includes relevant curriculum, inventive teaching techniques, and the teacher's ability to supervise and motivate students(MR Islam et al., 2020).

Based on the explanation from the research above, researchers think that the impact of implementing hybrid learning can influence the flexibility and quality of learning. This research also aims to look at the advantages and disadvantages of the impact of implementing hybrid learning on flexibility and quality of learning. And researchers also haveAIt is hoped that future researchers will research the impact of implementing hybrid learning on the flexibility and quality of learning in more depth and develop research to get maximum results.

## **RESEARCH METHOD**

### **Research design**

This research uses a quantitative research design, which uses statistical processes to present data in the form of numbers. Researchers created twenty questions to collect information about the research to find out the results. Researchers will ask respondents to answer the questions asked, which will be presented in the form of tables and percentages. The purpose of processing this data with the SPSS application is to compare the results of respondents' answers. After this comparison, researchers can provide solutions for any information that researchers get about the impact of implementing hybrid learning on flexibility and quality of learning.

### **Research procedure**

In this research, researchers investigated the impact of implementing hybrid learning on the flexibility and quality of learning. The aim of the researcher is to investigate this so that the researcher can collect, analyze and provide understanding of the data that has been collected. In making questions, researchers used good language that was easy for respondents to understand and comprehend. This aims to ensure that respondents who provide responses to questions asked by researchers can be answered quickly. That way, it will be easier for researchers to test the data being investigated regarding the Impact of Implementing Hybrid Learning on the Flexibility and Quality of Learning.

### **Research subject**

Before distributing the questionnaire, the researcher determined who would be the subject of this research. The subjects in this research were students from various educational institutions. Researchers are tasked with collecting data from the respondents' answers, then the data will later be processed and converted into percentages. Before the researcher distributed the questionnaire, the researcher asked respondents to take the time to fill out the questionnaire. The questionnaire consists of ten questions investigating the impact of implementing hybrid learning on flexibility and quality of learning.

### **Research Ethics**

In conducting research, researchers pay great attention to manners, ethics, behavior and manners. Because research ethics are the norms, manners and attitudes that researchers have to use as a basis for action. By upholding ethics in research, it will make it easier and faster for researchers to collect data. By using friendly and polite language, other people will easily understand and it will be possible not to put other people's feelings into a corner. Therefore, conducting research in accordance with ethics will have a positive impact on researchers. Apart from that, there is a feeling of security and comfort in conducting research, so that communication and receiving data is easy.

### **Data Collection and Analysis**

This time, researchers used quantitative methods to collect research data. The researcher also used a T-test as previously mentioned by the researcher. The purpose of collecting this data is to find relationships and become a benchmark between the research object materials regarding The Impact of Implementing Hybrid Learning on the Flexibility and Quality of Learning. By collecting the answers of 15 respondents. Researchers also carried out further testing using SPSS software to ensure that respondents' responses were very accurate and reliable. Thus, researchers must be very careful when collecting processed data.

**Table 1**

*Category Impact of Implementing Hybrid Learning*

No	Earning Category	Level of education	Percentage (%)
1	Strongly agree	Student	>90%
2	Agree	Student	40-60%
3	Disagree	Student	15-30%
4	Don't agree	Student	5-10%

**Figure 1**

*Data Collection and Analysis Flow*

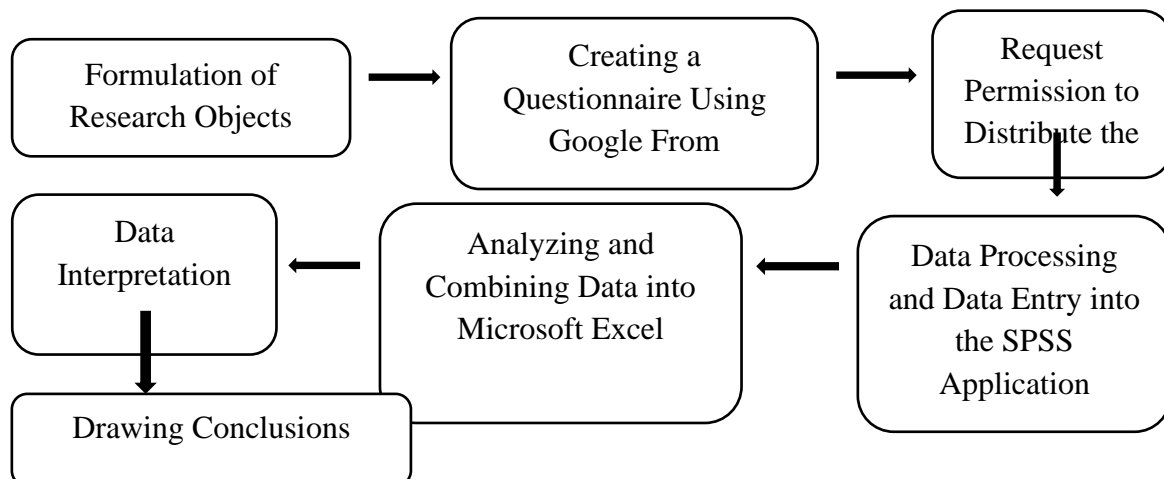


Figure 1 above shows how researchers collect and analyze research data. The results of data acquisition came from respondents' answers to the researcher's questions. Furthermore, in the quantitative research method, the researcher will also test again using the T-test which will be used to enter research data into the SPSS application. The number of questions asked by the researcher was 20 questions, where each question was divided into ten questions with different questions. Only after the questionnaire is distributed can researchers formulate and draw conclusions from the research object.

## RESULTS

### The Impact of Implementing Hybrid Learning on Flexibility and Quality of Learning

Students in the future will be able to choose to learn online or face-to-face through improved learning technology known as hybrid learning. Hybrid learning has several advantages, such as flexibility in choosing study time, increased social interaction, and increased learning effectiveness. However, hybrid learning also has disadvantages, such as a lack of supervision, engagement, and flexibility. Technology also increases social interaction and learning. Hybrid learning allows

students to interact directly with teachers and classmates, increasing social interaction. Technology also helps in developing digital skills. Hybrid education combines traditional teaching with digital technology, resulting in a more dynamic learning experience that is accessible to students around the world.

**Table 2**

*Summary of Percentage Results from Respondents' Answers*

No.	Question	Strongly agree	Agree	Disagree	Don't agree
1	Hybrid learning allows students to learn from anywhere and at any time.	25%	60%	10%	5%
2	More flexible and accessible hybrid learning allows students to adapt their study schedule to individual needs such as part-time work or family commitments.	20%	25%	25%	30%
3	Hybrid learning makes learning materials more accessible for students who live in remote areas or have physical limitations.	15%	35%	45%	5%
4	Hybrid learning keeps students more engaged in lessons because they have the opportunity to choose their own preferred learning environment.	45%	45%	4%	6%
5	Students can improve their academic performance with this increased flexibility and accessibility. This is because they can optimize information retention and concentration.	50%	45%	5%	0%
6	Hybrid learning allows for better digital skills, collaboration and interaction, a variety of different learning methods, unequal technology access, teaching and evaluation issues, lack of student engagement, and data safety and privacy.	20%	44%	35%	1%
7	Higher education institutions must address the problem of unequal student access to technology so that hybrid learning can be optimal.	55%	12%	25%	8%
8	Hybrid learning combines digital technology and traditional teaching to produce a more dynamic learning experience that is accessible to students around the world.	65%	15%	10%	10%
9	Although hybrid education offers many opportunities, higher education institutions also face many problems.	30%	60%	10%	0%
10	Hybrid learning combines in-person and	75%	15%	5%	5%

online methods, which may impact a student's desire and ability to actively participate in education.				
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Table 2 above shows the distribution of questionnaires that have been carried out by researchers. This questionnaire contains ten questions about the impact of implementing hybrid learning on flexibility and quality of learning. In addition, during the distribution of the questionnaire, the researcher presented a percentage of each response from the respondents. Therefore, respondents can choose to answer the researcher's questions by providing options such as strongly agree, agree, disagree, or disagree. And it can also be seen from the first question asked by researchers regarding hybrid learning, allowing students to learn from anywhere and at any time, getting the highest score of 60% of the agree options.

The second question, hybrid learning, which is more flexible and accessible, allows students to adapt their study schedule to individual needs such as part-time work or family commitments, resulted in a percentage of 25% less agreeing. Third question Hybrid learning makes learning materials more accessible for students who live in remote areas or have physical limitations, getting a score of 35% in favor. The fourth question about hybrid learning makes students more involved in lessons because they have the opportunity to choose the learning environment they want themselves, getting a percentage gain of 45% agreeing. Next, the fifth question concerns students who can improve their academic performance with this increased flexibility and accessibility. This is because they can optimize the retention and concentration of information, as many as 45% of the options strongly agree. Furthermore, the sixth regarding hybrid learning allows better digital skills, collaboration and interaction, a variety of different learning methods, unequal access to technology, teaching and evaluation problems, lack of student engagement, and data safety and privacy, as many as 35% disagree .

The seventh question, that higher education institutions must overcome the problem of unequal access to technology for students so that hybrid learning is optimal, obtained a percentage result of 12% choosing the agree option. In the eighth question regarding Hybrid learning combines digital technology and traditional teaching to produce a more dynamic learning experience that is accessible to students around the world, also found in the 15% approved option. The ninth question is about although hybrid education offers many opportunities, higher education institutions also face many problems getting results with a percentage of 60% who agree. For the last question regarding hybrid learning combining direct and online methods, which can influence students' desire and ability to actively participate in education, the percentage gain was 75% for the strongly agree option

**Table 3**

*Summary of Percentage Results from Respondents' Answers*

No.	Question	Strongly agree	Agree	Disagree	Don't agree
1	Important solutions for educational institutions and governments to overcome hybrid learning problems include training teachers and students, providing devices and internet connections for students who need them, and making learning materials	30%	70%	0%	0 %

	accessible to students.				
2	Hybrid learning may improve students' ability to think critically, allowing them to analyze different points of view or arguments.	45%	35%	15%	5%
3	Hybrid learning, which combines online and face-to-face learning, can improve people's critical thinking abilities.	75%	25%	0%	0%
4	Students' critical thinking skills are influenced by hybrid learning which combines face-to-face learning.	45%	52%	3%	0%
5	Hybrid learning can increase understanding, belief and practice of Asmaul Husna values according to students' abilities.	66%	24%	5%	5%
6	Hybrid learning can improve writing, reading and translation skills.	33%	44%	12%	11%
7	Hybrid learning can increase the ability to practice commendable attitudes and avoid disgraceful morals	54%	30%	16%	0%
8	Hybrid learning can increase the ability to worship and behave morally	20%	65%	10%	5%
9	The ability to take lessons or history can be enhanced through hybrid learning	35%	65%	0 %	0%
10	Hybrid learning can improve the ability to analyze arguments or points of view, identify assumptions, and learn from learning difficulties	40%	20%	20%	20%

In the statement in table 3 above, the researcher has also created ten questions. Which can be seen from the first question regarding important solutions for educational institutions and the government to overcome hybrid learning problems including teacher and student training, providing devices and internet connections for students who need them, and creating learning materials that can be accessed by students, getting percentage results. as many as 70% of options agreed. Next question number two about hybrid learning might improve students' ability to think critically, allowing them to analyze different points of view or arguments, getting the same percentage score on the agree option as 35%. The third question that hybrid learning, which combines online and face-to-face learning, can improve people's critical thinking abilities, received a percentage score of 75% strongly agree.

The fourth question about students' critical thinking skills influenced by hybrid learning which combines face-to-face learning, received a 52% percentage score for the agree option. The fifth question is about Hybrid learning can increase understanding, belief and practice of Asmaul Husna values according to students' abilities, getting as many as 66% of strongly agree options. The

sixth question regarding hybrid learning can improve writing, reading and translating skills, also obtained the same percentage gain of 44% for the strongly agree option.

Next is the seventhHybrid learning can increase the ability to practice commendable attitudes and avoid disgraceful morals, getting a percentage score of 54% strongly agree. The eighth question about hybrid learning can improve the ability to worship and behave morally, obtained a percentage gain of 20% strongly agree. In question number nine, that the ability to take lessons or history can be improved through hybrid learning, the highest number of options was also strongly agreed with 35%. The final question about hybrid learning can improve the ability to analyze arguments or points of view, identify assumptions, and learn from learning difficulties, getting as much as 40% of the strongly agree option.

Diagram 1

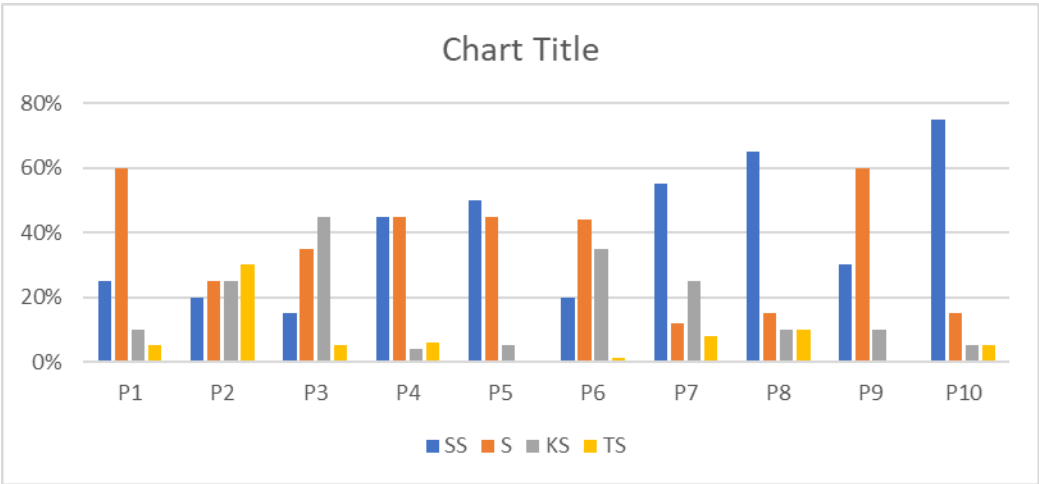
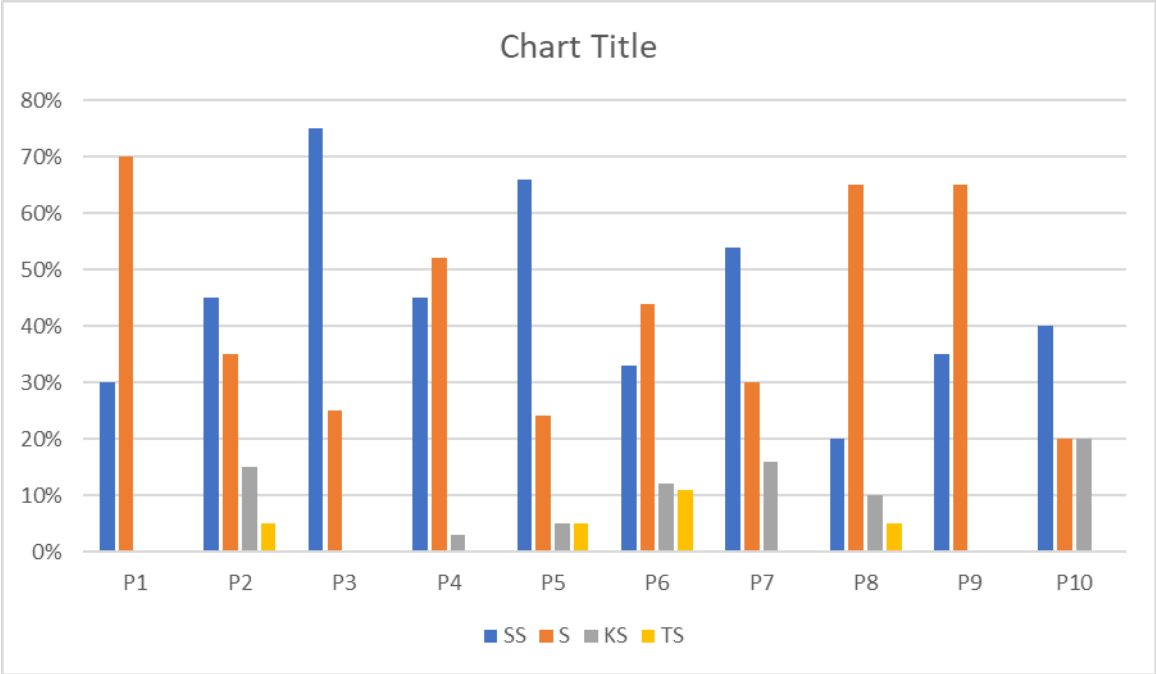


Diagram 2



**Table 3**  
*T-Test ConcerningThe Impact of Implementing Hybrid Learning on Flexibility and Quality of Learning.*

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE TEST	42.1500	20	18.60751	4.16077
	POST TEST	39,3000	20	18.43366	4.12189

### Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRE TEST & POST TEST	20	-.609	,004

### Paired Samples Test

		Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference	
		Mean	Std. Deviation		Lower	Upper
Pair 1	PRE TEST - POST TEST	2,85000	33.22376	7.42906	-12.69920	18.39920

Based on the results of table 3 above, it is a T-test using the SPSS application. From the research results, the researcher can conclude that the T-test in the first output section explains the mean as the average. In the Pre Test the average number produced was 42.1500, while in the Post Test section the result was 39,3000. Based on these results, it can be formulated that there are differences in the results of the respondents' answers. Next, in the Paired Samples Correlations section, you get a Correlation of -609, and the sign is 004. Next, in the Paired Samples Test section, you get a result of 33.22376 in the Std section. Deviation, while in the Std. Error Mean obtained a result of 7.42906. Based on these results, The impact of implementing hybrid learning on the flexibility and quality of learning is indeed influential.

**Table 4**

*T-test Concerning The Impact of Implementing Hybrid Learning on Flexibility and Quality of Learning.*

### Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE TEST	12,7500	20	12.08250	2.70173
	POST TEST	5,8000	20	7.60609	1.70077

### Paired Samples Correlations

				N	Correlation	Sig.
Pair 1	PRE TEST & POST TEST			20	,350	,130

### Paired Samples Test

				Paired Differences				95% Confidence Interval of the Difference	
				Mean	Std. Deviation	Std. Error		Lower	Upper
Pair 1	PRE TEST - POST TEST			6.95000	11.80756	2.64025		1.42389	12.47611

Furthermore, in table 4, there are also the results of research using the T-test. It can be seen in the first output section that the Pre Test results were 12.7500, and the Post Test results were 5.8000. In the Paired Samples Correlations section, we obtained a Correlation of 350, with a Sign result of 130. Meanwhile, in the Paired Samples Test section, we obtained a result of 11.80756 in the Std. Deviation, and Std. The mean error is 2.64025. Based on the results of this research, it can be seen between each question asked by the researcher regarding the impact of implementing hybrid learning on the flexibility and quality of learning.

## DISCUSSION

Hybrid learning combines conventional learning with online learning (Yu et al., 2023). Hybrid learning allows teachers and students to access teaching materials and lessons via the internet, which makes it easier for them to learn anytime and anywhere (Amalia & Pilendia, 2020). Hybrid learning, which uses a variety of online learning technologies and tools such as video, animation, and interactives, can help students who cannot attend classes in person or have inflexible class schedules (Schall et al., 2024). These tools can help students better understand what they are learning and help teachers teach more easily (Nixon & Swain, 2024). Hybrid learning allows students to work together and share ideas through online platforms, which increases their understanding of the class.

Hybrid learning makes it easier for teachers to track student progress and organize assignments because teachers can view and access student work online (Vaughn & Barnes, 2023). Hybrid learning allows teachers to use a variety of online tools, such as quizzes and tests, to assess student achievement (Atomatofa et al., 2024). Hybrid learning also allows teachers to access various online educational resources, such as animations, video tutorials, and various types of online learning materials (Salihu et al., 2024). Hybrid learning, which uses a variety of technologies and online learning tools, can help teachers create better lesson plans (Jiang & Paulino, 2024). Students can gain a better understanding of what they are learning and make it easier for teachers to teach.

Hybrid learning combines conventional learning with online learning. Computer devices and laptops are important technology for hybrid learning because they allow teachers and students to learn online (Bonadonna et al., 2024). Audio and video technology is also important for hybrid learning because it allows teachers and students to learn online (Nakisige et al., 2024). Webcam is a technology that allows students and teachers to take pictures and videos while interacting

online(Christoforou & Ferreira, 2022). With the help of artificial intelligence (AI) technology, hybrid learning in the future will provide a more interactive and fun way of learning(Dubinski et al., 2024). Virtual reality (VR) and augmented reality (AR) technologies will allow students to learn in a more personalized and effective way.

Students can learn better with online learning platforms that allow them to access teaching and learning materials online(Gomis-Porqueras & Rodrigues-Neto, 2018). The internet network is a very important technology for hybrid learning because it allows students and teachers to access teaching and learning materials online(Şimsek-Çetinkaya et al., 2024). Learning applications can help students learn more effectively. The implementation of hybrid learning has a significant impact on student motivation and enthusiasm and involvement in accessing anywhere and anytime(Glehan et al., 2023). This type of hybrid learning can make learning more in-depth, fun and motivate students to participate as best as possible if used correctly.

To ensure that hybrid learning benefits all students, teachers must be able to create hybrid learning solutions that are broader and more inclusive(Berger et al., 2020). In facing the era of digital transformation, it is very important for teachers to continue to explore and develop the potential for using technology in education(Mujwar & Kumar, 2020). Hybrid learning has many advantages, especially because it can be tailored to a student's unique understanding and needs. Hybrid learning and traditional learning approaches work well together because games help the learning process become more relevant, efficient, and effective(Yingst et al., 2020). Students not only get information passively, but they also actively participate in game elements.

## CONCLUSION

Hybrid learning has been shown to be an effective learning approach that increases students' motivation and engagement to learn. This method uses a variety of mechanisms designed to encourage active student involvement and includes elements of competition and engaging learning. In hybrid learning, intrinsic motivation the internal drive to learn becomes stronger because students experience learning experiences that are not only informative but also entertaining. Additionally, live evaluation and feedback is commonly used in hybrid learning to monitor student progress.

This allows students to self-evaluate, know their strengths and weaknesses, and continue to improve. By having a clear, easily visible plan, teachers can understand students' achievement levels and provide appropriate support when needed. As technological challenges advance, students in hybrid learning feel pushed proportionally to their skill level. Hybrid learning cannot be considered as a solution for the best learning design. The factors that determine how effective a game is are the game design, the quality of the learning content, and the teacher's ability to incorporate learning objectives into learning submaterials.

It is very important to provide an explanation of hybrid learning strategies and objectives that can help learning. Goals such as incorporating relevant assessment techniques and adjusting the level of difficulty according to student abilities are examples of things that can be done. Hybrid learning, however, can also be problematic. Potential network interference Students may focus too much on the entertainment aspect and ignore learning objectives if not organized properly. As a result, hybrid learning requires a balanced approach to balance the goals of learning and fun.

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