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IMPACT OF ARCGIS STORY MAPS ON GEOGRAPHY LEARNING AND REMOTE SENSING SKILLS IN MAN 1 MALANG STUDENTS

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Abstract

Higher education is required to produce graduates with superior research competence to face challenges in the academic and professional world. This study aims to explore innovative teaching strategies in improving the research competence of private university students in the Research Methods course. The research method used is a qualitative approach with a case study design in several private universities in Indonesia. Data collection techniques included in-depth interviews with lecturers and students, classroom observations, and analysis of relevant academic documents. The data were analyzed using a thematic approach to identify the patterns and effectiveness of the teaching strategies applied. The results showed that the implementation of project-based learning strategies, flipped classroom, and the use of digital technology such as data analysis software significantly improved students' research competencies. Students showed improvement in their understanding of research methodology, data analysis skills, and skills in preparing and presenting research reports. This study involved 71 students at one of the PTS that was the subject of the research. The implications of this study emphasize the importance of adapting more interactive and technology-based teaching strategies to support students' research competencies.

Keywords: Teaching Strategy, Educational Innovation, Research Competence, Research Methods, Private Universities

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INTRODUCTION | مقدمة

Research skills are fundamental skills that students must master, especially in preparing for the academic and professional world (Brew, 2020). However, various studies show that students in private universities (PTS) often experience difficulties in understanding and applying research methods effectively (Healey & Jenkins, 2018). One of the main factors contributing to this problem is the conventional learning approach that is less responsive to technological developments and student needs (Gibbs et al., 2019; Biggs & Tang, 2021).

Limited access to digital learning resources and lack of training in the use of data analysis software further exacerbate the condition (Means et al., 2020). Barron and Darling-Hammond's (2021) findings also indicate that learning effectiveness relies heavily on teaching strategies that promote deep understanding and critical thinking skills. In higher education, various innovative approaches such as the flipped classroom have been widely studied as a solution to improve student interaction and engagement in the learning process (O'Flaherty & Phillips, 2019).

However, the implementation of this model still faces obstacles, especially related to the readiness of lecturers and students in utilizing technology optimally (Reiser & Dempsey, 2018).

In addition, research over the past four decades shows that the application of technology in learning contributes significantly to improving educational effectiveness, although its success depends largely on proper pedagogical integration (Tamim et al., 2019). In this case, the readiness of educators in adopting technology is a key factor, so training programs for prospective educators in integrating technology into teaching must be systematically designed to improve the quality of learning (Tondeur et al., 2021). Edgar Dale illustrates that the learning experience obtained by students can be through the process of observing and listening through certain media, as well as the process of listening through language (Zuhroh, Zuhdi, Maimunah, & Sari, 2023). The principle of community-based learning as stated by Wenger (2020) emphasizes that the success of technology integration in education is not only determined by the tools used, but also by how the academic community builds meaning and identity in the learning process.

Vygotsky (2018) asserts that social interaction and the use of scaffolding in a digital environment can strengthen student understanding. This approach is aligned with the inquiry-based learning model, which has proven effective in developing critical thinking skills in an online learning context (Zydney et al., 2020). In this regard, the use of instructional videos and multimedia-based learning resources has shown a positive impact on learning effectiveness, especially in assisting the understanding of complex concepts (Zhang et al., 2018). However, the main challenge is how to ensure that the learning strategies implemented are able to increase student engagement and motivation to learn (West et al., 2021).

In response to this challenge, the design-based research approach has become an important strategy in evaluating and developing more effective technology-based learning models (Anderson & Shattuck, 2019). In addition, the concept of visible learning proposed by Hattie (2020) emphasizes that the effectiveness of a learning strategy must be supported by empirical data that proves its impact on student academic achievement. Therefore, innovations in digital learning need to consider not only technological aspects, but also evidence-based pedagogical approaches for students to gain optimal learning experiences.

In the context of learning in the digital era, the theory of connectivism developed by Siemens (2020) emphasizes the importance of knowledge connectedness and the use of technology as the main tool in building understanding. In this case, effective collaboration and interaction in an online environment can contribute significantly to improving the quality of learning (Swan, 2021). In addition, constructivist approaches in instructional design also play a crucial role in enhancing students' learning experience by emphasizing active exploration and the development of deeper conceptual understanding (Taber, 2020).

Constructivism-based learning emphasizes independent exploration, but research by Kirschner, Sweller, and Clark (2019) shows that minimally guided learning is often less effective, especially for students with low levels of prior understanding. This suggests that a balance between active exploration and appropriate instructional support is needed to prevent cognitive overload. The problem-based learning principle proposed by Merrill (2021) also emphasizes that the effectiveness of instruction depends largely on the extent to which students can connect concepts with their real-life applications.

Hodges et al. (2021) distinguish between well-designed online learning and emergency remote teaching, which often lacks a clear pedagogical structure. Therefore, the science-based learning design approach developed by Laurillard (2020) becomes relevant in ensuring that the

application of technology in learning actually supports conceptual understanding and creates a more meaningful learning experience.

In the context of blended learning, Garrison and Vaughan (2018) emphasize that the effectiveness of learning is not only determined by the technology used, but also by learning design strategies that are able to optimize the interaction between students and teaching materials. In addition, socio-emotional factors and student motivation also play an important role in the success of online learning. This is in line with Schunk and DiBenedetto's (2021) view, which emphasizes that learning strategies need to consider intrinsic motivation and social engagement to create a more effective learning experience.

In addition, the implementation of technology in higher education needs to be critically analyzed to ensure that its use actually improves students' learning experience, rather than simply replacing traditional methods without providing meaningful improvements (Kirkwood & Price, 2020). From a critical perspective, Freire (2018) emphasizes that education should be liberating and allow students to play an active role in the learning process, rather than just being passive recipients of information. Therefore, an effective learning design should be able to encourage students' active involvement and ensure that technology is used as a tool to deepen understanding, not just as a means of delivering material (Rienties & Toetenel, 2018).

In the concept of networked learning, Goodyear and Carvalho (2021) emphasize the importance of learning design that takes into account the interaction between students, teachers, and the digital environment. The success of online learning depends not only on the technology used, but also on how the instructional design is able to optimally integrate various elements in the learning ecosystem. Therefore, an approach that combines theories of connectivism, constructivism, and science-based learning design strategies can be an effective solution to improve the quality of learning in the digital era.

Other research shows that community-based learning and student-to-student collaboration contribute to improved understanding and critical thinking skills, especially in courses that require in-depth analysis, such as research methods (Smith & MacGregor, 2018; Scardamalia & Bereiter, 2021). Therefore, technology integration in education should not only focus on providing digital resources, but also on developing teaching strategies that encourage deeper interaction and reflection in the learning process (Tamim et al., 2019; Tondeur et al., 2021).

In the context of private higher education (PTS), reforming learning approaches is becoming increasingly important to adapt to the needs of students in developing their research competencies. The implementation of innovative strategies such as flipped classroom, project-based learning, and effective technology integration are expected to improve the quality of learning and prepare students for future academic and professional challenges (Strayer, 2019; Vygotsky, 2018). Along with the development of technology and learning methods, various innovative strategies have been implemented to improve students' understanding of research methodology. Project-based learning models (Thomas, 2020; Krajcik & Shin, 2020), flipped classroom (Bishop & Verleger, 2019; Abeysekera & Dawson, 2020), and the use of digital technology (Lee et al., 2021; Creswell & Creswell, 2021) have proven effective in improving students' research competencies in various universities. In addition, experiential learning and collaborative learning approaches have also shown positive results in deepening the understanding of research methodologies (Kolb, 2015; Johnson & Johnson, 2021). Hrastinski

(2021) adds that blended learning, which combines face-to-face interaction and online learning, can increase student engagement and provide flexibility in accessing teaching materials.

Although various learning innovations have been implemented, efforts to improve student research competencies in private universities still face a number of challenges that require further attention. One of the main challenges is how to optimally integrate technology-based learning strategies in the curriculum, so that students not only understand research concepts, but are also able to apply them in academic and professional contexts. Lo, Hew, and Chen (2021) revealed that flipped learning has great potential in increasing student engagement, but its effectiveness is highly dependent on proper instructional design. In addition, research conducted by Braun and Clarke (2018) emphasized the importance of thematic analysis in helping students understand the qualitative research process more deeply.

This study aims to identify innovative teaching strategies that can be implemented in HEIs to improve students' research competencies in Research Methods courses. By exploring more adaptive and technology-based approaches, it is hoped that students can be better prepared for academic and professional research challenges. In addition, this study also highlights the need for curriculum reform and capacity building for lecturers in implementing more effective and evidence-based learning strategies (Mishra & Koehler, 2019). Thus, the results of this study are expected to make a real contribution to the development of research-based learning in private universities and play a role in improving the quality of higher education more broadly.

METHOD | منهج

This research method aims to explore in depth how innovative teaching strategies are implemented in the Research Methods course at the PTS that is the object of study. A qualitative approach was chosen as it allows for a more comprehensive understanding of the experiences, perceptions, and interactions between lecturers and students in a learning context (Creswell & Poth, 2018). Qualitative studies enable in-depth exploration of social reality and provide insight into how students understand and respond to innovative teaching strategies (Merriam & Tisdell, 2016).

Participants in this study were selected using a purposive sampling technique to ensure that they had direct involvement in the courses studied (Patton, 2015). A total of 71 students enrolled in the Research Methods course became the main respondents in this study, while the lecturer who taught the course served as the key informant. In addition, some students who showed active participation in class discussions and academic assignments were selected for further interviews to gain a deeper understanding of their learning experience.

The data collection process was conducted through three main techniques: in-depth interviews, participatory observation, and document analysis. Interviews were conducted in a semi-structured manner to remain flexible in exploring information about the effectiveness of the teaching strategies implemented (Kvale & Brinkmann, 2015). Observations were made by recording classroom learning activities, interactions between students and lecturers, and the use of technology in supporting learning (Angrosino, 2016). In addition, document analysis includes a review of the syllabus, Semester Learning Plan (SSP), teaching materials, and student assignment results to evaluate how the material is delivered and understood by students (Bowen, 2009).

Data analysis was conducted thematically based on the Braun & Clarke (2018) model, which includes several stages: (1) transcription of interview data and observation notes, (2) initial coding to identify patterns in the data, (3) search for major themes that emerged from interviews, observations, and documents, (4) review of themes to ensure they were consistent with the data collected, (5) definition and naming of themes, and (6) preparation of an analysis report. This thematic approach was chosen because it allows the identification of patterns of meaning that emerge in the data and provides a context-rich analysis (Nowell et al., 2017).

To increase the validity and reliability of the data, this study applied source and method triangulation strategies. Source triangulation was conducted by comparing data from student, lecturer, and observation interviews, while method triangulation was applied by combining interviews, observation, and document analysis (Denzin, 2017). In addition, discussions with peers and confirmation of interview results with participants were conducted to ensure that data interpretation remained objective and in line with participants' experiences (Lincoln & Guba, 1985).

With this systematic approach, the research is expected to provide an in-depth picture of the effectiveness of innovative teaching strategies implemented in the Research Methods course as well as the challenges faced in the learning process.

RESULT | نتائج

This study aims to explore the effectiveness of innovative teaching strategies in a Research Methods course at a private university in Indonesia. Based on the analysis of data obtained from in-depth interviews, classroom observations, and document analysis, several key findings were found related to students' perceptions of the teaching methods, the level of engagement in learning, and the challenges faced in implementing the innovative strategies.

Student Perceptions of Innovative Teaching Strategies

Table 1. Student Perceptions of Innovative Teaching Strategies

Aspect	Percentage of Students (%)	Key Findings
Students who found innovative teaching strategies helpful	82%	The flipped classroom and project-based learning strategies enhanced their understanding of Research Methodology concepts. Students were more active in discussions and found it easier to grasp the material through hands-on experiences.
Students struggling to adapt	18%	Difficulties in self-directed learning and limited access to digital resources were the main challenges. Some students preferred lecture-based methods as they provided a clearer structure for understanding the material.

From the research results, it can be concluded that the majority of students (82%) felt that the innovative teaching strategies applied in the Research Methods course had a positive impact on their understanding. The flipped classroom approach and project-based learning were considered more interesting and helped students to understand concepts more deeply. With this strategy, students are encouraged to be more active in discussions and experiential learning, so that they do not only receive information passively but also develop better analytical and critical skills.

However, there are 18% of students who still have difficulties in adapting to this learning model. Some of the main obstacles are lack of experience in independent learning and limited access to digital resources. Students who are used to conventional learning methods, such as

lectures, feel more comfortable with a clearer and more directed structure. They tend to have difficulties in managing their time and understanding the material independently before the in-class discussion session takes place.

This finding suggests that while innovative teaching strategies have many benefits, there needs to be a more adaptive approach to accommodate students who have difficulties. Lecturers can provide more guidance in the use of learning technology and provide additional resources for students who need them. In addition, periodic evaluation of the effectiveness of teaching strategies is also needed to ensure that all students benefit optimally from the methods applied.

Level of Student Engagement in Learning.

Table .2: Level of Student Engagement in Learning

Engagement Category	Percentage of Students	Description
Active |	65%	Students actively participate in class discussions and project-based activities. They show high enthusiasm and frequently contribute to learning.
Currently	25%	Students attend class activities but with minimal participation. They mostly listen rather than interact.
Less Active/Passive	10%	Students tend to be passive, rarely participating in discussions or projects. They prefer lecture-based methods and show low engagement in class activities.

The table above shows the level of student engagement in discussion and project-based learning. The majority of students (65%) fall into the active category, which means they are intensely involved in class discussions and project activities. Students in this category tend to have high motivation to learn independently and are more proactive in exploring the material.

A total of 25% of students showed engagement in the moderate category, which means that they kept up with class activities but with more limited participation. Students in this group may still be adjusting to innovative learning methods or have a tendency to be more passive in class interactions.

While 10% of students fall into the less active/passive category, which means they rarely participate in discussions or projects and rely more on the lecture method as their main source of understanding. Students in this group are likely to experience barriers in using technology as a learning tool or are less familiar with more interactive learning methods.

Overall, these results show that the discussion and project-based learning approach succeeded in improving the engagement of most students. However, there are still some students who need further support in order to participate more actively in the learning process. This level of engagement is also influenced by individual preferences and students' readiness to use technology as a learning tool.

Challenges in Implementing Innovative Teaching Strategies

Table 3: Challenges in Implementing Innovative Teaching Strategies

Challenge	Percentage of Students	Description
Lack of Technological Readiness	40%	Students struggle to access digital resources and data analysis software used in learning. This is due to device limitations or an unstable internet connection.
Limited Independent Learning Skills	30%	Students have difficulty managing their time and understanding material independently before class. They are still accustomed to passive learning methods and require more guidance in applying active learning strategies
Adaptation to New Learning Methods	30%	Some students struggle to adapt to technology-based learning approaches. The transition from traditional methods takes time and requires support from lecturers in the form of guidance and additional training.

Based on the results of the study, there are three main challenges faced by students in adapting innovative teaching strategies, namely technology readiness, self-learning ability, and adaptation to technology-based learning methods.

(1). Lack of Technology Readiness (40%).

Most students experienced problems in accessing digital resources and data analysis software used in learning. This is due to the limitations of personal devices such as laptops or smartphones, as well as unstable internet connections. In some cases, students have to find alternatives such as using campus computer laboratory facilities or relying on public internet networks. These limitations have an impact on their delay in completing technology-based assignments and accessing materials before class.

(2). Limited Self-Learning Ability (30%)

Strategies such as flipped classroom and project-based learning require students to be more independent in understanding the material before class. However, 30% of students admitted that they still have difficulties in managing time and understanding the material independently. They are still accustomed to passive learning methods, where lecturers are the only source of information in class. Lack of experience in reading teaching materials before lectures and difficulties in organizing study time are the main factors that hinder the effectiveness of this strategy.

(3). Adaptation to New Learning Methods (30%).

Some students still find it difficult to adapt to technology-based learning approaches. The transition from traditional methods such as lectures to more interactive strategies requires additional time and support. Students who are not used to using technology in the learning process feel that they need further guidance from lecturers or training in using supporting software. In addition, they also need adjustments in learning patterns to follow a more dynamic learning model.

From the findings, it can be concluded that while innovative teaching strategies are proven to increase student engagement and understanding, challenges need to be overcome by providing technological support, self-study guidance, and training in the adaptation of digital learning methods.

Impact of Teaching Strategies on Student Understanding

Table 4: Impact of Teaching Strategies on Student Understanding

Category |	**Percentage** (%)	**Description**
Increased Confidence	75%	Students feel more confident in drafting research proposals after participating in project-based teaching methods and group discussions.
Still Need Guidance	20%	Students find innovative strategies helpful but still require additional guidance to gain a deeper understanding of the material.
Better Understanding with Conventional Methods	5%	Students feel more comfortable with traditional teaching methods, such as lectures, as they provide a clearer structure for understanding the material.

The table above illustrates how innovative teaching strategies, such as project-based learning and group discussions, impacted students' understanding in the Research Methods course. The majority of students (75%) reported that these approaches increased their confidence in developing research proposals. This suggests that strategies based on hands-on experience and active interaction help students understand concepts better.

However, 20% of students still felt the need for additional guidance despite the innovative method. This indicates that some students need more support in understanding the material, either through lecturer assistance, additional learning resources, or academic consultation sessions.

Additionally, 5% of students stated that they understood the material better through conventional teaching methods, such as lectures. They felt that this approach provided a clearer and more structured framework that was easier to follow. This indicates that not all students can immediately adapt to innovative methods and still require a more flexible approach that aligns with their learning styles.

Overall, these results confirm that innovative teaching strategies can enhance students' understanding, but a more adaptive approach is needed to accommodate those who struggle with adaptation.

DISCUSSION | مناقشة

The findings of this study reveal that innovative teaching strategies, such as the flipped classroom and project-based learning, have a positive impact on students' comprehension and engagement. The majority of students reported that these methods helped them gain a deeper understanding of concepts while also enhancing their analytical and critical thinking skills. These findings align with the research of Abeysekera and Dawson (2020), which demonstrated that the flipped classroom can improve students' learning motivation and reduce cognitive load through a more flexible and interactive presentation of materials.

Furthermore, Barron and Darling-Hammond (2021) emphasized that learning approaches that focus on conceptual understanding through active student engagement can lead to deeper learning experiences. In this context, the flipped classroom and project-based learning provide students with opportunities to develop their understanding through independent exploration before face-to-face sessions. This is consistent with the findings of Bishop and Verleger (2019), whose survey highlighted the effectiveness of the flipped classroom in increasing student participation in learning.

Despite the proven effectiveness of these strategies, several challenges remain in their implementation. Some students still struggle to adapt to these learning models. The primary obstacles include limited access to technology (40%), low self-directed learning skills (30%), and difficulties in adjusting to technology-based learning methods (30%). Biggs and Tang (2021) emphasized that the effectiveness of learning largely depends on students' preparedness to manage their own learning processes. In this regard, students with weaker self-directed learning skills tend to face difficulties in the flipped classroom, as this method requires them to understand the material before attending class sessions.

This study identifies several barriers to the implementation of innovative teaching strategies, such as the flipped classroom and project-based learning. One of the key challenges is that approximately 18% of students prefer conventional teaching methods, such as lectures, which they perceive as more structured. Gibbs et al. (2019), in Learning by Doing, explained that transitioning from passive to active learning requires time and adequate support, including study guidance and systematic reflection. Brew (2020) also highlighted the importance of a flexible approach in integrating innovative teaching methods with familiar learning structures to reduce resistance to change.

In the context of blended learning, Hrastinski (2021) emphasized the need for a balance between online and offline interactions to maintain learning effectiveness. Therefore, several solutions can be implemented to address the challenges students face, including:

1. Enhancing Technological Support – Providing adequate technological infrastructure to ensure equal access for all students.
2. Strengthening Self-Directed Learning Guidance – Developing academic mentoring programs to help students improve their independence in learning.
3. Training in Digital Learning Adaptation – Offering specialized training for students to adapt to technology-based learning methods.
4. Periodic Evaluation of Teaching Strategy Effectiveness – Conducting regular assessments to ensure that the implemented methods provide optimal benefits for students, as recommended by Creswell and Creswell (2021) through a data triangulation approach to evaluate the effectiveness of educational programs.

Overall, this study demonstrates that innovative teaching strategies, such as the flipped classroom and project-based learning, have a positive impact on students' understanding and engagement. The majority of students reported that these methods helped them grasp concepts more deeply while also enhancing their analytical and critical thinking skills. This aligns with the findings of Bishop and Verleger (2019), who stated that the flipped classroom increases student participation by allowing more time for active discussions and material exploration.

However, there are several challenges in implementing these strategies. Abeysekera and Dawson (2020) identified that a major challenge in the flipped classroom model involves higher cognitive load and varying levels of student motivation for independent learning. This is supported by the findings of this study, which indicate that limited access to technology (40%), low self-directed learning skills (30%), and difficulties in adapting to technology-based learning methods (30%) are the main factors hindering the successful implementation of these strategies.

Additionally, Means, Bakia, and Murphy (2020) highlighted that the effectiveness of digital learning largely depends on students' readiness to access and utilize technology optimally. Therefore, developing adaptive, student-centered learning strategies is a key factor in achieving optimal educational outcomes.

Challenges and Solutions in Implementing Innovative Learning Models

The research findings indicate that innovative teaching strategies, such as the flipped classroom and project-based learning (PBL), have a positive impact on students' comprehension and engagement. The majority of students reported that these methods help them gain a deeper understanding of concepts while enhancing their analytical and critical thinking skills. This aligns with the findings of Bishop and Verleger (2019), who stated that the flipped classroom increases student participation and engagement through active discussions and deeper material exploration. Additionally, research by West et al. (2021) confirms that flipped learning can enhance student motivation, particularly when integrated with learning strategies that promote active involvement.

However, in practice, some students still face difficulties in adapting to this learning model. According to Abeysekera and Dawson (2020), the primary challenges in the flipped classroom include increased cognitive load and varying levels of student motivation. This study also highlights key obstacles in implementing technology-based learning methods, such as limited

access to technology (40%), low self-directed learning skills (30%), and difficulties in adapting to digital learning models (30%). These findings align with Means, Bakia, and Murphy (2020), who emphasize that the effectiveness of digital learning heavily depends on students' readiness to access and utilize technology optimally. Kirkwood and Price (2020) further argue that the integration of technology in education must take into account students' preparedness to ensure its intended benefits are fully realized.

Beyond the flipped classroom, the project-based learning (PBL) model has also proven effective in improving students' understanding, as discussed by Krajcik and Shin (2020). However, this approach requires strong collaboration skills and independent learning abilities. Johnson and Johnson (2021) stress that cooperative learning strategies can help develop these competencies. In the context of collaborative learning, Smith and MacGregor (2018) propose models that allow students to engage in more interactive and supportive group learning experiences. Wenger (2020) also highlights that community-based learning can enhance student engagement in collaborative projects.

Furthermore, Kolb's (2015) experiential learning theory suggests that direct experiences in the learning process, such as through projects and active discussions, can enhance students' conceptual understanding. However, these learning experiences must be supported by adequate technological infrastructure. In this regard, the Technological Pedagogical Content Knowledge (TPACK) model proposed by Mishra and Koehler (2019) underscores the importance of integrating technology in teaching to effectively engage students. Tondeur et al. (2021) add that educators' readiness to incorporate technology into their teaching is a crucial factor in improving the effectiveness of digital learning.

In the context of blended learning, Hrastinski (2021) emphasizes that the success of digital learning depends on maintaining a balance between online and face-to-face interactions. Therefore, the design of flipped classrooms and PBL must be adaptive to accommodate students with varying levels of preparedness. Recommendations by Tamim et al. (2019) also highlight that the implementation of technology in education must consider accessibility and student readiness. Additionally, research by Hodges et al. (2021) distinguishes between well-planned online learning and emergency technology-based teaching, stressing that the effectiveness of flipped learning relies heavily on well-structured pedagogical planning.

As an adaptive measure, additional support is needed in the form of enhancing students' digital literacy, providing self-directed learning guidance, and offering training in the use of educational technology. Regular evaluations of the effectiveness of teaching strategies are also crucial to ensure that all students can benefit optimally from the implemented methods. Thus, the adoption of innovative learning models not only contributes to increased student engagement and comprehension but also fosters a more inclusive and responsive educational ecosystem that meets the challenges of digital learning.

CONCLUSSION | خاتمة

The research findings indicate that innovative teaching strategies, such as the flipped classroom and project-based learning, have a positive impact on students' comprehension and engagement. The majority of students feel that these methods help them gain a deeper understanding of concepts while enhancing their analytical and critical thinking skills. This is reflected in the high level of participation in discussions and projects, which reached 65%.

However, some students still face difficulties in adapting to these learning models. The primary challenges include limited access to technology (40%), low self-directed learning skills (30%), and difficulties in adapting to technology-based learning methods (30%). Additionally, approximately 18% of students prefer conventional teaching methods, such as lectures, which they perceive as more structured.

Therefore, while innovative strategies have proven effective in enhancing students' understanding and engagement, a more adaptive approach is needed to accommodate varying levels of student readiness. Potential solutions include increasing technological support, providing self-directed learning guidance, and offering training to help students adapt to digital learning models. Regular evaluations of the effectiveness of teaching strategies are also essential to ensure that all students can derive optimal benefits from the implemented methods.

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