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Millealab as A Virtual Reality-based Learning Platform for Slow Learners Students

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Abstract: This research aims to analyze the to find out the response of using Millealab on the material comprehension of slow learners. This study used a qualitative approach with a case study method. The subjects in this study were slow learners grade 8 students at SMP Plus Rahmat Kediri, East Java. The instruments used in this research are observation, interview, and observation which were then analyzed inductively. The result show that virtual reality (VR) helps slow learners connect abstract concepts with real experieces, which supports their understanding. The findings have immportant implications in inclusive education, where VR can improve the cognitive growth and academic understanding of slow learners students.

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Introduction

Learning media are physical facilities or software designed to support the interaction between teachers and students in the teaching and learning process so that learning becomes more communicative and easy to understand. Puspitarini & Hanif (2019) explain that media selection must ensure that it is accessible to all students, both inside and outside the classroom. This is very important, especially in online or blended learning situations, where digital technology is often used. Then, price also needs to be considered, especially if the media requires special equipment or official permits. Teachers must ensure that the use of such media does not impose a financial burden on students or schools. Ease of use also holds equal significance. Ningsih & Sari (2021) state that effective learning media are those that can be easily used by both teachers and students. If the media is too complex or requires high technical skills, it can hinder the learning process. Therefore, it is important to choose media that are easy and practical to use. Finally, it is also necessary to pay attention to the quality and credibility of the learning materials. The selection of media must present accurate, up-to-date information that aligns with the curriculum to support a precise and directed learning process.

According to Dwijayani (2019), the use of media in the learning process has become a crucial element, helping students understand the material more effectively and efficiently. Teachers have many options for delivering material to students due to the availability of various types of media. Choosing the appropriate type of media based on learning objectives, student character profiles, and tool availability will improve the quality of teaching in the classroom. Herdina & Fakhrurriana (2023) deliver that the development of technology also drives innovation in learning media, making it important for teachers and students to continuously adapt so that the teaching and learning process runs more optimally.

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Widodo et al. (2022) define slow learners as "children who have intellectual abilities below average but still within the normal range. They take longer to understand concepts and require more individualized and repetitive learning methods. In addition, Janah & Aprilia (2023) describe slow learners as "children who need additional time and approaches to learning because they tend to process information more slowly than their peers, but they still have the potential to learn and develop if given appropriate guidance.

Tikasari (2020) explains that from a psychological perspective, slow-learner children typically have an IQ score between 70-85, which is lower than average but does not reach the threshold for intellectual disability (below 70). They can also have difficulty processing information, especially if the information is presented quickly or is complex. However, these children can still learn and develop, provided they are given the right support and approach to learning. Teaching plans for slow learners must be tailored to their needs and potential to be effective. One effective way is by providing structured instructions and clear steps. The teacher must break down tasks or materials into smaller, more understandable parts, and sequentially provide instructions. Puspitasari et al. (2021) explain that the use of visual media such as images, diagrams, or videos is very helpful for slow learners because they find it easier to understand visual information than verbal information. In this case, the feedback of the material is very vital. A slow learner needs more time to remember concepts, so they need to repeat the material several times to strengthen their understanding.

Another important strategy is to engage multiple senses (multisensory). Teachers can engage various senses in learning by using activities that involve hearing, sight, and physical movement to enhance students' understanding of concepts. In addition, providing extra time is very important for completing tasks or exams. Children with slow learning speeds often require extra time to understand and answer questions, so giving them more time will make them feel more relaxed and comfortable. Voskamp et al. (2022) argue that providing individual support in learning can also be very useful, where teachers give special attention and direct guidance according to the individual needs of the students.

Equally important, learning strategies for slow learners need to strengthen their confidence and motivation. Teachers must create a positive learning environment where every small progress is appreciated. Constructive feedback should also be given continuously so that students feel supported in their learning. Wang (2023) states that building positive relationships with students and providing emotional support can help them overcome failures and boost their learning motivation.

The application of learning strategies through the Millealab app can be an innovative new way to help slow learner children in their learning process. Utami et al. (2021) explain that VR enables students to experience more interactive and immersive learning, which is highly effective for slow-learner children who require visualization and concrete experiences to understand concepts. By implementing this strategy, teachers can utilize the VR features in Millealab to create a learning environment filled with visuals and real simulations, making it easier for students to understand the lessons being taught.

According to Alkahfi et al. (2024), the rapid development of information and communication technology has resulted in many innovations in the field of education, including the use of interactive learning media. One of the interesting innovations is Millealab, a platform that allows users to create immersive virtual learning experiences. Utilizing Millealab as a learning tool is a great opportunity to enhance the quality of education, especially for students with diverse learning styles, including those who learn slowly.

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The application of VR in the field of education has become an effective way to enhance the quality of student learning globally. Zulherman et al. (2021) define Millealab as a Virtual Reality-based learning platform designed to increase student engagement and interaction in the learning process through immersive and innovative experiences. Additionally, Harnisa (2023) describes Millealab as "a digital learning medium that utilizes VR technology to create simulations and learning environments that closely resemble reality, to help students better understand complex concepts". However, not all students have the same level of learning ability, especially those who experience learning difficulties or are commonly referred to as slow-learners.

At SMP Plus Rahmat Kediri, East Java as with other schools, some students face difficulties in understanding traditional subject matter. This can be caused by several factors, such as lack of encouragement, lack of complete learning facilities, and less diverse learning approaches. So, it is necessary to find alternative solutions that are more interactive and challenging to improve the learning outcomes of these students, MilleaLab is the answer to this challenge. The platform utilizes VR technology to create an engaging and immersive learning environment. Using MilleaLab, teachers can make complex learning materials easy to understand through realistic simulations. Additionally, MilleaLab also offers flexibility to students to study anytime and anywhere without having to rely on specific time and location.

Recent studies on the use of MilleaLab have proven that the application is highly successful in improving understanding of abstract concepts, learning motivation, and better learning outcomes than traditional methods. For example, research conducted by Alkahfi et al. (2024) shows that MilleaLab can be utilized according to students' self-learning initiatives anywhere and anytime. Furthermore, research also indicates that MilleaLab can enhance students' understanding of abstract concepts, learning motivation, and academic achievements.

Sultan & Hasanuddin (2023) deliver that the term "slow learner" refers to children who learn more slowly than their peers. Although it does not refer to a specific medical issue, slow-learner children generally have below-average intelligence without falling into the category of intellectual disabilities or specific learning disorders. Children who exhibit these traits often require extra time, repetition, and support to understand and absorb information in a learning environment.

Moreover, slow learner children can learn at their own pace using this application. The Personalized learning strategy has proven effective, allowing students to access materials multiple times in a virtual environment without feeling rushed by time or classmates. With Millealab, teachers can provide learning modules that are available to students at all times, giving them more time to understand the material. Zulherman et al. (2021) state that the use of this application can also enhance the learning spirit, as students feel like they are learning while playing in a fun and interactive virtual world, making the learning atmosphere more engaging.

Millealab also supports a multisensory approach, allowing slow learner children to engage various senses in the learning process seeing, hearing, and interacting directly in a virtual environment. It is very important for students who have difficulty understanding lesson material that is only presented in the form of text or verbal explanations. Abbas Shah et al. (2024) argue that by using strategies that integrate Millealab technology, teachers can also provide direct feedback through the platform, while also giving personalized guidance according to the students' needs. This step can increase the engagement of slow learners in

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studying, strengthen their understanding, and foster self-confidence, as well as make learning more inclusive and adaptive.

Although there have been several studies discussing the use of technology-based learning media, there is still limited research specifically addressing the use of Millealab as a learning medium for slow learners. In addition, existing research often only focuses on aspects of Millealab usage such as research conducted by Nurliasari (2024) which discusses the challenges of using Millealab without considering its impact on student learning outcomes. This research aims to analyze the to find out the response of using Millealab on the material comprehension of slow learners. This research is expected to make a significant contribution to the development of education in Indonesia, particularly for the education of children with special needs, especially in the use of educational technology. The results of this research are expected to provide useful insights for educators, policymakers, and educational technology developers on how to address the challenges faced by students with special needs and maximize the benefits of technology in the learning process.

Research Method

This study used a qualitative approach with a case study method, according to Nassaji (2020), qualitative research is a method based on postpositivism philosophy, used to study the conditions of natural objects. In this study, the researcher acts as the key instrument, and data collection is carried out using triangulation techniques. The research results emphasize meaning rather than generalization, and the data analysis is inductive. Qualitative research allows researchers to better understand the context and continuity of social phenomena because this research does not only focus on the final results but also on the processes and dynamics that occur in it. Researchers can use various data collection techniques, such as in-depth interviews, participatory observation, and document analysis, to collect relevant and in-depth data. Denny & Weckesser (2022) state that qualitative research also allows researchers to conduct thematic analysis and content analysis to understand the themes and themes that appear in the data. Furthermore, Olmos-Vega et al. (2023) say that in qualitative research, researchers often use theories that are oriented toward understanding and interpretation, such as constructivism theory and interpretive theory. This research also often involves analyzing data inductively, i.e. from details to generalities, to identify patterns and themes that emerge in the data

The participants in this study are slow learner students who attend SMP Plus Rahmat. The selection of participants was conducted purposively, considering students who actively use Millealab in their learning process. A total of 2 slow-learner students were selected for interviews, considering the variation in gender and their special needs to obtain diverse perspectives. Data was collected through semi-structured interviews. These interviews allow researchers to follow a predetermined interview guide while still providing space for participants to express their views freely and in-depth. With this approach, the research is expected to provide a comprehensive understanding of the response students after using Millealab as a learning medium for slow learners at SMP Plus Rahmat Kediri.

Results and Discussion

In this study, the authors observed the responses of slow learner students after using Millealab as a learning tool in English subjects. This research was conducted at SMP Plus Rahmat Kediri with two students as respondents. Millealab is a technology-based learning

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platform designed to help students with varied learning abilities, especially those who have difficulty understanding learning materials.

The first student, A (13 years old), showed a tendency of difficulty in understanding English vocabulary and grammar. The second student, B (14 years old), had difficulties in speaking and understanding everyday conversations in English. Both are categorized as slow learners as they require more time and a different approach to learning compared to other students. During the learning process using Millealab, both students were given access to English materials through interactive videos, practice questions, and educational games on the platform. Millealab provides engaging content with visuals that make it easy to understand basic English concepts. In addition, the app's direct feedback feature allows students to know their learning progress in real-time. After using Millealab in English teaching, a very good response was shown by the slow learners at SMP Plus Rahmat Kediri. They felt a significant increase in motivation during learning. The app provides an interactive learning experience, so students are more engaged and motivated to follow the lessons. In this way, they not only undergo the English learning process but also enjoy it.

The students also stated that their understanding of the lessons has improved. In the past, they had difficulty understanding the basic principles of English. But, with the help of Millealab, the hard-to-understand content became easier to understand. The interactive features in the app help students make connections between theory and practice, thus giving deeper meaning to their learning.

Table 1. Student Response Result

No	Respondent	Experience with Millealab	Impression after using Millealab	Difficulties Faced	Further Learning Suggestion
1.	Student A	Liked videos and animations that helped with understanding the material	Easier to remember English vocabulary and grammar	Difficulty understanding some of the more complex vocabulary	More practice and use of interactive videos.
2.	Student B	Enjoy conversational practice and immediate feedback	Feel more confident in speaking English	Still struggling to pronounce some sentences fluently	More speaking practice and more intensive guidance

Table 2. Teacher Response Result

	Improved Understanding of Material	Visual and Interactive Approach	Improved Speaking Skills	Motivation and Confidence
Teacher Response	The MilleaLab app helps slow learners understand English material gradually. They can repeat the material as needed without pressure.	Visual features, such as images, videos and animations, make learning more interesting and make it easier for students to remember vocabulary and sentence structures.	The speaking practice feature in the app helps slow learners practice English pronunciation and enunciation in a fun way.	Using this app increases their confidence in learning English.

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Based on the results of observations and interviews with both students and teacher , it can be concluded that the use of Millealab has a positive impact on English learning for slow learners. Millealab helps students to understand the material more easily, increase self-confidence, and provide a fun learning experience. Nevertheless, some students still need further guidance to overcome certain difficulties, such as in pronunciation or understanding more complex vocabulary. In the future, the use of Millealab could be expanded by adding more speaking exercises and personalized guidance so that students can overcome their learning barriers more effectively.

Discussion

The results of this study are very consistent with constructivist learning theory, which emphasizes active learning and experience. According to research conducted by Lee et al. (2024), the use of VR in a constructivism-based classroom strongly supports an active learning approach where students can build understanding based on exploration and direct interaction. Kavanaugh concluded that VR allows students to experience complex and abstract situations first-hand, helping them develop deeper understanding without the limitations of the classroom. In the context of slow learners, this is particularly important as they need longer and more concrete experiences to understand a concept, which is in line with the results of this study. The VR Millealab method gives students the opportunity to develop their own understanding of difficult topics by exploring and interacting, rather than just passively receiving information from the teacher. This is very helpful for slow learners, who need more time and practice to truly understand new concepts. Research has found that the astonishing characteristics of virtual reality can help slow learners connect abstract concepts with real-world experiences, and this aligns with the fundamental principles of constructivism. A study by Lund & Wang (2019) states that VR is very effective in increasing learning motivation and student engagement. They found that interactive learning environments such as VR can overcome the boredom that slow learners often experience when following conventional learning methods.

Although this study emphasizes the response after using of Millealab for students with learning difficulties, it also highlights the challenges that arise when integrating advanced technology into the classroom. Limitations of VR devices and technical difficulties sometimes pose obstacles to the successful implementation of Millealab. This challenge highlights the importance of adequate technological infrastructure and ongoing support for teachers to optimize the potential of VR as a learning tool. A study by Kavanagh et al. (2019) on VR integration in education highlighted the challenges faced by schools with limited resources. They found that although VR has great potential as a learning tool, hardware, and technical limitations are still major obstacles to its implementation. This is in line with the results of this study, which found that VR devices are sometimes an obstacle to the successful use of Millealab, especially in the context of inclusive classrooms with limited infrastructure. Future research can explore ways to enhance the utilization of VR in schools with limited resources and seek solutions to address the issues identified in this study.

Millealab offers a dynamic and captivating learning environment that can improve academic results for a variety of students with different learning styles. Based on a study by, Creed et al. (2023) VR has significant potential in supporting inclusive education as this technology enables more individualized and flexible learning according to the needs of students, including those who are slow learners. VR gives students the opportunity to learn at their own pace in a supportive environment without pressure from classmates. This is very

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much in line with the research results which show that Millealab helps create a more inclusive learning atmosphere, where slow learners can learn alongside their peers with confidence. According to this study, virtual reality technology can be extremely helpful in fostering inclusive education by enabling slower learners to succeed alongside their classmates. The study supports the concept of differentiated instruction, where learning is tailored to the needs, strengths, and weaknesses of individual students. Millealab's ability to adjust difficulty levels, present content in different formats (audio, visual, interactive), and provide instant feedback is in line with personalized learning theory.For slow learners, this means that they can progress at their own pace, which helps in mastery learning where students must fully understand a concept before moving on to the next one.

The conceptual implications also suggest that technology can be a tool for inclusion, helping slow learners overcome challenges in traditional learning environments. The study could emphasize how digital tools like Millealab can reduce barriers to learning, promote equity, and create more accessible learning experiences for students with various learning abilities. Practically, the study may show that slow learners who use Millealab improve in areas such as vocabulary retention, and grammar understanding. This is because the platform's adaptability allows students to engage with content that is specifically tailored to their learning pace and level. The conceptual implications of the study suggest that Millealab can support personalized, scaffolded, and engaging learning experiences for slow learners, fostering inclusion and equal access to quality education. Practically, it can enhance learning outcomes, support teachers, and promote student independence and confidence. The study suggests that the integration of digital tools like Millealab can transform how slow learners are supported in educational settings, providing both a practical and conceptual foundation for future developments in educational technology.

Conclusion

The results of a study show that the use of Millealab as a learning tool is beneficial for slow learners at SMP Plus Rahmat Kediri. The application of virtual reality technology from Millealab helps students improve their focus, understanding of the material, and motivation to learn. Teachers at SMP Plus Rahmat Kediri also see an increase in student participation during the learning process, this media provides a more interactive and interesting learning experience for students. The benefits of using Millealab are seen in the improvement of learning outcomes for slow learners, especially in understanding abstract concepts that are difficult to understand with traditional methods. This shows that Millealab is an innovative learning method that is effective in supporting inclusive education in the school. Overall, Millealab helps increase the motivation of slow learners and helps them become more focused and active in learning, resulting in improved learning outcomes compared to traditional methods.

Recommendation

Based on this research, a more personalized and adaptive Millealab should be developed, specifically to meet the needs of slow learners. This can be done by simplifying content, providing more visual aids, and offering different levels of difficulty. It is also desirable to develop and provide professional development programs for educators on how to effectively incorporate Millealab into their teaching practices. Teachers should be trained on how to interpret data from the platform and adapt their teaching strategies based on the insights gathered.

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