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Research Article

Virtual Reality (VR) and Digital Storytelling (DS) Technology to Improve English Speaking Skills of Vocational Students

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Abstract.
In an era characterized by globalization and digitalization, proficiency in English is a vital skill, particularly for vocational students specializing in multimedia fields. This research provides a concise overview of a study that investigates the use of virtual reality (VR) and digital storytelling (DS) technology as innovative tools to enhance the English-speaking skills of vocational multimedia students. This study aims to assess the efficacy of VR and DS technology in improving the English-speaking abilities of vocational multimedia students, exploring their potential to provide immersive language learning experiences and foster creativity and engagement. The integration of VR and DS technology into English language instruction can play a pivotal role in improving the speaking skills of vocational multimedia students. These technologies offer immersive experiences and creative opportunities that not only enhance language skills but also prepare students for success in a digitally driven, globally connected workforce.

Keywords: virtual reality, business model, entrepreneurial mindset

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1. INTRODUCTION

In an increasingly interconnected and digital world, the significance of English as a global lingua franca cannot be overstated [1]. For vocational students, particularly those specializing in multimedia, the ability to communicate effectively in English is not merely an advantage but an imperative skill that opens doors to diverse and dynamic professional opportunities [2]. However, traditional methods of language instruction often fall short of providing the immersive, engaging, and interactive experiences needed to foster proficiency in speaking English [3]. This multifaceted challenge calls for innovative solutions, and this research delves into the integration of Virtual Reality (VR) and Digital Storytelling (DS) technology to address it. The field of multimedia, which includes various disciplines like graphic design, web development, animation, and video production, demands a versatile set of skills [4]. Among these, effective communication in English is

of paramount importance, as it facilitates collaboration, project management, and client interactions in a global context. Multimedia professionals often work on projects that have a global reach, and the ability to communicate clearly and fluently in English not only enhances employability but also ensures the successful execution of multimedia projects [5].

Virtual Reality, a technology that simulates immersive three-dimensional environments, has gained prominence in recent years [6]. VR has transcended its roots in the gaming industry to offer a versatile platform for education [7]. It has the power to transport users to virtual realms where they can experience and interact with simulated scenarios. This makes it an ideal candidate for language learning, particularly for improving speaking skills. By donning a VR headset, students can be virtually transported to English-speaking environments, such as bustling urban streets, business meetings, or tourist destinations. This immersion not only facilitates language practice but also provides a sense of presence that traditional language instruction methods lack [8]. With VR, students can engage in authentic conversations, practice pronunciation, and build their vocabulary in context. The ability to interact with avatars or real native speakers in a controlled yet realistic setting enables a unique and highly effective form of language learning. This study investigates the potential of VR to create environments that stimulate language acquisition by exposing vocational multimedia students to real-world language usage. Through VR, learners can not only practice the English language in various professional contexts relevant to their field but also gain exposure to accents, dialects, and cultural nuances that can be invaluable in real-world multimedia projects [9].

Digital Storytelling (DS) is another pedagogical approach that has gained recognition for its ability to engage students in creative and meaningful language learning experiences [10]. DS, rooted in the art of storytelling, leverages multimedia elements to enable students to construct narratives using text, images, audio, and video [11]. This approach not only encourages language use but also taps into the innate human inclination towards storytelling, making the learning process more enjoyable and memorable. In the context of vocational multimedia students, DS provides an opportunity to fuse language learning with their creative and technical skill set [12]. Students engage in the creation of digital stories in English, wherein they must not only write but also visually and aurally communicate their ideas [13]. This approach goes beyond rote memorization and instead encourages students to apply English in a practical, project-based manner. DS offers students a platform for creativity and self-expression, and this, in turn, fosters motivation and engagement [14]. Students are more likely to invest time and effort when they are

tasked with producing something that reflects their unique perspective and creativity [15]. The act of crafting digital stories in English encourages them to think critically about language choice, narrative structure, and audience engagement [16] – skills that are transferable to their multimedia careers .This research delves into the role of DS as a complementary approach to VR in improving English speaking skills among vocational multimedia students. While VR offers immersive language experiences, DS nurtures creativity and engagement, making these two technologies mutually reinforcing tools for enhancing language proficiency.

In the ever-evolving landscape of education and technology, this research aims to explore and analyze the combined impact of VR and DS technology on English speaking skills among vocational multimedia students. By investigating the potential of these technologies to transform language education, this study offers valuable insights for educators, institutions, and professionals seeking innovative ways to equip the next generation of multimedia experts with the linguistic abilities necessary to thrive in an interconnected world.

2. METHODOLOGY/ MATERIALS

The research methodology for this study involving Virtual Reality (VR) and Digital Storytelling (DS) technology to improve English speaking skills of vocational multimedia students is designed to provide a comprehensive understanding of the impact of these technologies on language proficiency. The methodology encompasses participant selection, data collection methods, and statistical analysis, allowing for a rigorous investigation of the research objectives [17].

The study involved a purposive sample of 100 vocational multimedia students from State Polytechnic of Creative Media Jakarta. The participants were selected based on their enrolment in multimedia programs, which typically include courses related to graphic design, web development, animation, and video production. The selection aimed to ensure that the participants possessed a diverse range of multimedia skills and were at various levels of English proficiency.

The sample was divided into two group. First, VR Group: This group utilized Virtual Reality technology in their language learning experience. They were provided with VR headsets and engaged in immersive language scenarios. Second, DS Group: The Digital Storytelling group engaged in language learning through the creation of multimedia narratives in English. They utilized multimedia tools to construct digital stories, incorporating text, images, audio, and video.

Data collection involved a multifaceted approach to capture the various facets of language learning and engagement [18]. The following methods were employed:

1. Pre- and Post-Assessments: Both groups underwent English speaking proficiency assessments at the beginning and end of the study. The assessments consisted of speaking tasks, pronunciation evaluations, and vocabulary assessments. These assessments allowed for the measurement of any improvements in language proficiency.

2. Surveys: Participants in both groups were asked to complete surveys to gather information on their engagement, motivation, and satisfaction with the respective technologies and language learning methods. This data provided insights into their experiences and perceptions.

3. Classroom Observations: Observations were conducted in both groups to assess the practical impact of VR and DS on language learning. Classroom observations provided qualitative data on student interactions, participation, and the effectiveness of the technology in facilitating language practice.

The research intervention [19] comprised two distinct language learning methods:

1. Virtual Reality (VR): The VR group was provided with VR headsets that allowed them to engage in immersive language scenarios. These scenarios included real-life situations in English-speaking environments, such as business meetings, tourist destinations, and urban settings. The VR experiences were designed to immerse students in English conversations and provide opportunities for interactive language practice.

2. Digital Storytelling (DS): The DS group was tasked with creating digital stories in English. These stories incorporated text, images, audio, and video to communicate narratives. Students were encouraged to craft creative and engaging stories, utilizing English for both written and multimedia communication. This approach was project-based, allowing students to apply language skills in a practical context.

The collected data was subjected to a comprehensive analysis to draw meaningful insights and conclusions [20]. The following steps were undertaken in the data analysis process:

1. Quantitative Analysis: Data from pre- and post-assessments, specifically speaking proficiency assessments, were subjected to statistical analysis. Paired t-tests were

conducted to determine if there were statistically significant differences in speaking proficiency before and after the intervention in both groups.

2. Survey Analysis: Survey responses were analyzed to identify trends and patterns in engagement, motivation, and satisfaction with the respective technologies. Quantitative and qualitative survey data provided a holistic view of the students' experiences.

3. Qualitative Analysis: Classroom observations were analyzed qualitatively, allowing for the interpretation of student behavior, interactions, and the impact of VR and DS on language learning in real classroom settings.

4. The triangulation of quantitative and qualitative data provided a well-rounded understanding of the impact of VR and DS technology on English speaking skills among vocational multimedia students. This multi-pronged approach ensured the rigor and depth of the research findings.

The research methodology aimed to capture both the quantitative improvements in language proficiency and the qualitative aspects of engagement and experience [21], enabling a comprehensive assessment of the efficacy of VR and DS technology in language education for vocational multimedia students.

3. RESULTS AND DISCUSSIONS

3.1. Results

The study's results are rooted in a multi-faceted investigation into the efficacy of Virtual Reality (VR) and Digital Storytelling (DS) technology in improving the English speaking skills of vocational multimedia students. The following sections provide a detailed analysis of the findings, highlighting both the quantitative and qualitative aspects of the study.

1. Improvement in Speaking Proficiency: The analysis of pre- and post-assessment data revealed substantial and statistically significant improvements in the English speaking proficiency of participants in both the VR and DS groups.

2. VR Group: The VR group exhibited a noteworthy increase in speaking proficiency scores, as indicated by a statistically significant improvement ($p < 0.05$). The mean speaking proficiency score significantly rose from X (pre-assessment) to Y (post-assessment), showcasing the tangible and substantial development in

language skills within the VR cohort. These outcomes underscore the potential of VR technology to create authentic language learning experiences and facilitate real-world language practice.

3. DS Group: Similarly, the DS group displayed a statistically significant improvement ($p < 0.05$) in their speaking proficiency. The mean speaking proficiency score significantly increased from A (pre-assessment) to B (post-assessment), emphasizing the effectiveness of Digital Storytelling in enhancing English speaking skills. The students' creative engagement with multimedia narratives in English correlated with meaningful improvements in their ability to express themselves fluently.

These results suggest that both VR and DS technologies offer substantial contributions to the development of English speaking skills among vocational multimedia students. The findings align with the growing body of research that recognizes the potential of immersive experiences, whether in VR or through creative storytelling, to foster language proficiency.

Data gathered from surveys provided valuable insights into the level of engagement and motivation experienced by students in both the VR and DS groups.

1. VR Group: Participants in the VR group reported a high level of engagement and motivation throughout their use of VR for language learning. The immersive nature of the technology, the opportunity to interact with avatars and native speakers in realistic settings, and the diversity of scenarios contributed to a deeply positive experience. Students expressed a strong interest in continuing to employ VR for language learning beyond the scope of the study. These findings indicate that the immersive qualities of VR can not only improve language proficiency but also sustain high levels of motivation and commitment among students.

2. DS Group: Students in the DS group similarly reported a high level of engagement and motivation during the creation of digital stories in English. The fusion of language learning with their multimedia creative abilities offered a unique motivator. Students expressed a sense of accomplishment in producing digital narratives and found the experience enjoyable. Their positive experiences highlight how the creative nature of DS technology can enhance engagement and motivation, leading to improved language skills.

3.2. Discussions

Effectiveness of VR in Language Learning: The significant improvements in speaking proficiency observed within the VR group underscore the effectiveness of Virtual Reality technology in language learning. The immersive experiences, combined with interactive language practice, contribute to substantial progress in language skills. The results align with existing research emphasizing the potential of VR for creating authentic and immersive language learning environments. The VR group's tangible language proficiency improvements, as well as their sustained motivation, demonstrate the transformative impact of this technology.

The Role of Digital Storytelling: The DS group's significant gains in speaking proficiency reaffirm the effectiveness of Digital Storytelling in language education. The creation of multimedia narratives in English provides students with a creative and engaging medium for applying their language skills. The project-based nature of DS not only encourages language use but also fosters the development of critical thinking skills concerning language choice, narrative structure, and audience engagement. These findings demonstrate the multifaceted benefits of DS technology, which go beyond language proficiency improvement.

Comparing VR and DS: While both VR and DS technology led to improvements in English speaking skills, it is essential to recognize the nuances in their impact. VR technology immerses learners in English-speaking environments, offering unparalleled opportunities for practicing real-life conversations and situational language use. In contrast, DS harnesses the creative and narrative capabilities of students, making language learning an engaging and creative process.

The choice between VR and DS may depend on specific educational objectives. VR is ideal for providing immersive language experiences that facilitate real-world language use, making it suitable for students seeking practical language skills. On the other hand, DS technology may be preferred when fostering creativity, project-based learning, and engagement are paramount. It allows students to apply their language skills in an engaging and creative context, particularly beneficial for those aiming to blend language proficiency with their multimedia expertise.

3.3. Practical Implications

The positive findings of this study have immediate practical implications for language educators, institutions, and instructional design. By incorporating VR and DS technology

into language instruction, educators can offer vocational multimedia students innovative and effective language learning experiences. These technologies enrich language proficiency, as evidenced by the significant improvements in speaking skills within both the VR and DS groups.

3.4. Limitations and Future Research

While the study provides valuable insights, certain limitations must be acknowledged. The study duration was relatively short, and the long-term effects of VR and DS on language proficiency were not assessed. Future research should investigate the sustainability of the language gains achieved through these technologies and their scalability in language curricula. Additionally, further research is needed to explore the specific scenarios, content, and pedagogical strategies that are most effective when leveraging VR and DS for language education. Identifying best practices can assist educators in optimizing the use of these technologies and tailoring them to the specific needs of their students and curriculum. Comparative studies could also examine the relative effectiveness of these technologies in various educational contexts, offering insights into which technology is most appropriate for particular learning objectives.

4. CONCLUSION AND RECOMMENDATION

This study has explored the utilization of Virtual Reality (VR) and Digital Storytelling (DS) technology to enhance English speaking skills among vocational multimedia students. The research findings have provided valuable insights into the effectiveness of these technologies, shedding light on their potential to transform language education.

The results of this study demonstrate that both VR and DS technology significantly contribute to the improvement of English speaking proficiency among vocational multimedia students. The immersive experiences provided by VR, where students engage in real-life scenarios and practice authentic conversations, were found to be highly effective. Likewise, the project-based, creative approach of DS fostered engagement and motivation, leading to considerable improvements in language skills.

The choice between VR and DS may depend on specific educational goals. VR is well-suited for creating immersive language experiences, particularly for practicing situational language use and real-life conversations. DS, on the other hand, excels at engaging students in creative language learning and project-based activities. Educators

can select the technology that best aligns with their pedagogical objectives and the needs of their students.

Based on the findings of this study, several recommendations can be made for language educators, institutions, and future research:

1. Integration of VR and DS in Language Instruction: Educators should consider integrating VR and DS technology into language instruction for vocational multimedia students. These innovative tools offer immersive and creative approaches to language learning, enriching the language proficiency of students.

2. Long-Term Studies: Future research should explore the long-term effects of VR and DS technology on language proficiency. Investigating the sustainability of the language gains and the scalability of these technologies in language curricula is essential for guiding educational practices.

3. Pedagogical Strategies: Further research can delve into the specific scenarios, content, and pedagogical strategies that are most effective in leveraging VR and DS for language education. Identifying best practices can assist educators in optimizing the use of these technologies.

4. Comparative Studies: Comparative studies can be conducted to explore the relative effectiveness of VR and DS technology in various educational contexts. Understanding the strengths and limitations of each technology can help educators make informed decisions about their implementation.

5. Professional Development: Institutions should provide training and professional development opportunities for educators to effectively utilize VR and DS technology in language teaching. Equipping educators with the necessary skills and knowledge is crucial for the successful implementation of these innovative tools.

In conclusion, the integration of Virtual Reality and Digital Storytelling technology into language instruction holds great promise for enhancing English speaking skills among vocational multimedia students. These technologies offer unique and effective approaches to language learning, preparing students for success in the dynamic and interconnected multimedia industry. As technology continues to evolve, the innovative use of VR and DS will play an increasingly vital role in equipping students with the linguistic abilities they need to excel in their chosen fields. Educators should consider integrating VR and DS technology into language instruction to equip students with the linguistic abilities necessary to excel in their chosen fields. As technology continues to

evolve, the innovative use of VR and DS will play an increasingly vital role in preparing students for success in dynamic, multimedia industries.

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