Indonesian Journal of Education (INJOE) e-ISSN: 2810-059X
Vol. 4 No. 3, August 2025, pages:
350~361

EFFECTIVENESS OF USING INTERACTIVE DIGITAL MEDIA IN IMPROVING FISIOTHERAPY STUDENTS' IN SPEAKING SKILLS AT MUHAMMADIYAH PRINGSEWU UNIVERSITY

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Abstract

This study aims to determine the effectiveness of using interactive digital media in improving the speaking skills of physiotherapy students at Muhammadiyah University Pringsewu. Speaking skills are an important competency for physiotherapy students, especially in therapeutic communication, patient education, and collaboration with other medical professionals. The research method used is quantitative with a quasi-experimental design using pre-test and post-test. The instruments used include a speaking skills test based on an assessment rubric and a student satisfaction questionnaire. The results of the data analysis show a significant increase in post-test scores compared to pre-test scores, as well as a high level of student satisfaction with the interactive digital media used. In conclusion, interactive digital media has proven effective in improving the professional communication quality of physiotherapy students and is recommended for integration into clinical practice-based learning.

Keywords: Interactive Digital Media, Speaking Skills, Professional Communication, Physiotherapy

INTRODUCTION

Speaking skills are an essential competency for physiotherapy students, especially in supporting their professional practice in the field. A physiotherapist is not only required to master therapy techniques but also must be able to explain procedures to patients clearly and convincingly. Good verbal communication will help create a positive therapeutic relationship between the physiotherapist and the patient (Sidabutar & Hutagalung, 2022). In the medical world, miscommunication can lead to misunderstandings that result in therapy failure (Jannah et al., 2023). Therefore, physiotherapy students must be equipped with effective speaking skills from their time in college. Strengthening speaking skills has become an important part of the physiotherapy education curriculum.

However, in reality, conventional speaking skills learning still faces many challenges. Many lecturers still rely on one-way lecturing methods, which tend to be passive and do not actively involve students. Students often feel awkward or afraid to speak in public due to the lack of realistic practice. This situation is exacerbated by the limited face-to-face time, which prevents students from receiving adequate feedback. As a result, their speaking skills develop slowly and are less structured (Mehrvarz et al., 2023). This challenge drives the need for innovation in more participatory and contextual learning methods.

Along with the advancement of information technology, higher education now has broad access to various interactive digital media (Huda et al., 2024). Interactive digital media allows students to engage directly in the learning process with features such as simulations, interactive quizzes, and scenario-based conversation exercises. Through this media, students can practice their speaking skills in a more flexible, independent, and enjoyable environment (Yutami & Widiana, 2024). In addition, digital media allows for faster and more objective evaluation of students' speaking abilities. This innovation also bridges the limitations of interaction in face-to-face learning (Du et al., 2024). In other words, the use of interactive digital media is a potential solution in enhancing the effectiveness of speaking skills learning.

Interactive media such as medical conversation simulation videos, virtual roleplay, and AI-based learning applications are now increasingly accessible and relevant for use in health education. Physiotherapy students can learn how to deliver therapy instructions, provide health education, and answer patient questions more realistically. Additionally, students can practice repeatedly to improve their speaking skills, both in terms of sentence structure, intonation, and facial expressions. The use of this media also provides a more personalized learning experience because students can learn at their own pace (Pada & Amir, 2023). In this context, the lecturer acts as a facilitator who provides guidance and feedback on the speaking learning process. Thus, the learning becomes more active, reflective, and oriented towards real practice.

It is important to conduct scientific research to determine the extent of the effectiveness of interactive digital media in improving students' speaking skills, particularly in the field of physiotherapy. This research will provide an empirical basis for whether the use of such media truly has a positive impact on students' speaking skills. In addition, the results of this study can serve as a reference for the development of curricula, teaching methods, and

communication skills training in physiotherapy education. The use of digital media is also considered relevant in facing the challenges of the digital era and the needs of distance learning. Evaluation of this media can help educational institutions adapt to the needs of the digital generation students. Therefore, studies on the effectiveness of interactive digital media become important and relevant to conduct.

Muhammadiyah University of Pringsewu (UMPRI) is one of the universities that offers a physiotherapy program and actively develops technology-based learning methods. Students at this campus come from various regional backgrounds, which demands an inclusive and adaptive learning approach. With its developing digital facilities and innovative teaching spirit, UMPRI is the right place to experiment with interactive digital media in learning. In addition, this campus is committed to improving the quality of graduates through the integration of technology in the educational process. The presence of lecturers who are open to updating teaching methods also serves as a supporting factor. Therefore, the selection of UMPRI as the location for this research is considered relevant and strategic.

By conducting research in the UMPRI environment, it is hoped that a real picture of the application of interactive digital media in the local context can be obtained. Physiotherapy students at this campus will be the appropriate subjects for the research because they have previously received conventional education, allowing for significant comparisons. The research results can also serve as an internal reference for policy-making in the development of more innovative teaching methods. This research can also strengthen UMPRI's position as a campus that is adaptive to change and responsive to the needs of students. Moreover, the demand for physiotherapists who can communicate professionally is increasing in the era of modern healthcare services. Therefore, this research is not only academic in nature but also has a direct impact on improving the quality of graduates.

Based on the aforementioned description, research on the effectiveness of interactive digital media in improving the speaking skills of physiotherapy students becomes very important. This research is expected to make a significant contribution to the world of higher education, particularly in the development of technology-based learning. In addition, the research results can encourage lecturers to adopt more effective interactive methods that are relevant to the current needs of students. This research also provides theoretical contributions in the field of educational communication and the use of digital media in skills learning. With a systematic and evidence-based

approach, it is hoped that this research can provide practical and applicable recommendations. Finally, the learning of speaking skills can proceed more effectively, engagingly, and have a tangible impact on students' readiness to face the workforce.

RESEARCH METHOD

This research uses a quantitative approach with a pre-experimental design, namely a one group pretest-posttest design, to determine the effectiveness of using interactive digital media in improving the speaking skills of physiotherapy students (Sugiyono, 2021). This design allows the researcher to compare the results before and after the treatment is given. The population in this study consists of students from the Physiotherapy Study Program at Universitas Muhammadiyah Pringsewu in certain semesters who have received therapeutic communication material. The sample was taken using purposive sampling technique, which is the determination of the sample based on certain considerations so that the data obtained align with the research objectives (Creswell & Creswell, 2017). The research instruments include a speaking skills test using an assessment rubric based on professional communication aspects (Frye & Hemmer, 2012), a questionnaire on satisfaction and perception of interactivity with interactive digital media, and video documentation as additional analysis material through the observation of student performance.

The research procedure begins with administering a pre-test of speaking skills to obtain an initial overview of the students' abilities. Then, a learning intervention was conducted using interactive digital media such as medical conversation simulations, responsive videos, or interactive application-based platforms (Mayer, 2009). After the learning period is over, students are given a post-test with the same instrument to measure the development of speaking skills. The pre-test and post-test data were analyzed using statistical tests such as the paired sample t-test if the data were normally distributed or the Wilcoxon test if the data were not normally distributed (Field, 2024). Additionally, the data from the questionnaires were analyzed descriptively to determine the level of satisfaction and perception of students towards the media used. This inferential and descriptive analysis aims to thoroughly evaluate the effectiveness of interactive digital media in the context of speaking skills learning within the higher education environment of physiotherapy.

RESULT AND DISCUSSION

Improvement of Students' Speaking Skills After Using Interactive Digital Media

The use of interactive digital media in the learning process has proven to have a positive impact on the speaking skills of physiotherapy students. Before the treatment was given, the students showed limited speaking abilities in conveying information systematically and professionally. The pre-test results show that many students still struggle to use medical terminology correctly and convey instructions clearly. Several aspects of communication, such as articulation, intonation, and facial expressions, are also not yet optimal. This indicates the need for more contextual learning methods that involve active participation (Wang & Wang, 2023). Therefore, interactive digital media were implemented as an intervention in this study.

After the students participated in learning using interactive digital media, there was a significant improvement in their speaking skills. The post-test results showed that most students were able to convey information in a more coherent and confident manner. This improvement is evident in several aspects such as clarity of pronunciation, appropriate use of language, and more communicative message delivery. Students also showed improvement in their ability to answer simulated questions resembling clinical situations. With the presence of simulation-based training, students become more accustomed to facing real-world scenarios in the workplace (Putri, 2024). This proves that digital media can create a learning experience that closely resembles real practice.

The comparison between pre-test and post-test scores was analyzed using statistical tests to determine the significance of the improvement. The analysis results using the paired sample t-test showed that there was a significant difference between the scores before and after the intervention. The average post-test scores consistently increased across all aspects of speaking skills. The significance value (p-value) obtained was below 0.05, which means that the improvement did not occur by chance. Thus, statistically, the use of interactive digital media is effective in improving students' speaking skills. These findings provide quantitative evidence of the effectiveness of technology-based learning methods (Alehpour, 2024).

Practically, this improvement can also be seen in the change in students' behavior when speaking in class forums and simulations. Students have become more active in speaking, able to construct sentences with clearer structures, and more confident in delivering material. Interaction in

group discussions has also increased, indicating that interpersonal communication skills are also developing. The lecturer observed an increase in students' learning motivation and enthusiasm towards communication material. Repeated exercises provided by digital media also help students independently correct speaking mistakes (Ramadani, 2022). This shows that the effectiveness of digital media is not only statistically evident but also felt in practice.

The success of interactive digital media in improving speaking skills can be explained through multimedia learning theory and constructivism theory (Rochman et al., 2024). According to Mayer (2009), the use of media that combines text, audio, and visuals can enhance understanding and information retention. Students not only listen but also see and actively respond, making the learning process more meaningful. In the context of physiotherapy, simulation exercises allow students to experience clinical situations virtually. Thus, speaking skills develop functionally according to the needs of professional practice. This theory reinforces the scientific basis of this research's findings.

Overall, the use of interactive digital media significantly contributes to the improvement of speaking skills among physiotherapy students. This improvement is not only measurable through statistics but is also reflected in the students' activity, confidence, and communication quality in learning practices. The results of this study can serve as a basis for the development of technology-based curriculum and teaching methods in higher education environments. Lecturers can utilize various interactive media to enhance students' communication skills more effectively. In addition, this approach is also in line with the needs of the digital generation of students who are accustomed to using technology in their daily lives. Thus, the integration of interactive digital media is a strategic step in enhancing the quality of speaking skills learning.

Students' Responses to the Use of Interactive Digital Media

Students' responses to the use of interactive digital media in speaking skills learning show very positive results. Based on the results of the questionnaire, the majority of students expressed a high level of satisfaction with this learning method. They feel that digital media provides a learning experience that is different from the conventional methods that have been boring until now. Visualization and simulation make the material easier to understand and apply in real-world contexts. Students also appreciate the

diversity of content such as interactive videos, quizzes, and self-study exercises. This shows that interactive digital media meet students' expectations for modern learning.

In terms of ease of use, students feel that the media used is quite intuitive and does not require high technical skills. Most of the media can be accessed through personal devices such as laptops or smartphones, making it flexible to use anytime. Students do not experience significant difficulties in navigating the menu, running simulations, or uploading assignments. The presence of a brief guide or tutorial at the beginning of use also helps students adapt quickly. This ease of access makes learning more efficient and not limited by space and time. Thus, digital media is considered user-friendly and supports a smooth learning process.

The aspect of student engagement also increased during the learning process using interactive digital media. Students become more active in completing exercises, providing feedback, and reflecting on their speaking performance. The presence of automatic feedback on several media makes students more motivated to correct their mistakes (Halimatussa'diyah et al., 2022). In addition, interactive features such as conversation simulations make students feel more emotionally and cognitively engaged. They not only become recipients of information but also active participants in the learning process. This shows that digital media successfully increased overall student participation (Zuhro et al., 2023).

Many students stated that learning through digital media feels more enjoyable and not boring. They feel attracted to the engaging visual displays, clear learning pathways, and a more dynamic learning atmosphere. Compared to conventional lectures, digital media offers a fresher and more interactive experience. Students mentioned that they find it easier to concentrate and do not quickly feel bored during the learning process. This shows that digital media can create a conducive and enjoyable learning environment. With a positive learning atmosphere, students become more open to developing their speaking skills.

From the perspective of learning significance, students feel that the use of digital media makes the material feel more relevant to real-world practice. Communication simulations with patients, for example, provide a highly contextual and applicable experience. Students feel more prepared to face clinical situations because they have experienced various communication scenarios through interactive media. They realize the importance of speaking clearly, empathetically, and professionally in the context of physiotherapy

services (Maulidiya et al., 2023). The learning is not only theoretical but also builds practical skills that will be used in the field (Sabri & Nasruddin, 2023). Therefore, students consider this learning not only effective but also meaningful.

In general, students' responses to interactive digital media are very positive, both in terms of satisfaction, ease, engagement, and perception of the learning experience. These results indicate that technology-based learning approaches can meet the needs of the digital generation students. Additionally, this positive response serves as an indicator that digital media can be more widely applied in various other practical courses. Students hope that the use of digital media is not just temporary, but becomes a permanent part of the learning process on campus. They also propose that lecturers use this method more frequently for interactive materials. With adequate support, interactive digital media can become an effective tool in the transformation of higher education.

The Relationship Between Media Interactivity and the Quality of Students' Professional Communication

Interactivity in digital media plays an important role in enhancing students' confidence when communicating professionally (Cahyanti & Nuroh, 2023). Through simulated practice and automatic feedback, students can learn from their mistakes in real-time. This allows them to continuously improve their speaking skills without feeling pressured as they would in live practice in front of a lecturer or peers. The more often they engage with interactive scenarios, the higher their confidence becomes. Students feel more prepared to face real communication with patients because they have "practiced" it in a virtual environment. This confidence becomes a key asset in shaping effective professional communication.

Interactive digital media also contributes to improving students' speech structure. Features such as conversation scripts, sentence construction exercises, and interview simulations help students think systematically when speaking. They learn to convey information in a logical order, starting from the opening greeting, explanation of the problem, to a professional closing. This structure is important in medical communication so that the message can be clearly understood by both patients and other medical personnel. Students become more organized when speaking, reducing the use of irrelevant words (Rahmadhany et al., 2022). Thus, media interactivity directly shapes structured speaking habits.

In addition to structure, the ability to convey information accurately has also improved thanks to the interactivity of digital media. In the simulation, students are trained to use medical terminology correctly and explain therapy procedures concisely yet accurately. They learn to adjust their speaking style according to the characteristics of the interlocutor, for example, speaking more simply to lay patients. This is part of adaptive professional communication. Students are also accustomed to regulating their speaking pace and emphasizing important points in every conversation. All of this proves that engagement in digital media directly impacts the quality of their information delivery.

The relationship between interactive engagement and students' communication performance appears strong in the obtained data. Students who are most active in using digital media tend to show the most significant improvement in speaking skill assessments. They are more fluent, responsive, and able to express themselves professionally in simulations and class discussions. This shows that interactivity is not just an element of entertainment, but an important factor in shaping communication skills. Active participation in digital media encourages students to think critically and reflectively about the way they speak. Therefore, the higher the interactive engagement, the higher the professional communication performance displayed.

From the results of observations and video documentation, it can be seen that actively engaged students show more initiative in interactions. They more frequently ask questions, provide answers, and express opinions in a polite and structured manner. This shows that interactivity not only shapes the technical aspects of speaking but also attitudes and ethics in communication. Students appear more prepared to engage in effective two-way communication, both with patients and colleagues. Speaking ethics, such as active listening and providing appropriate responses, are also developed through interactive practice. The quality of their professional communication grows comprehensively, both in terms of content and attitude.

Overall, the correlation between the interactivity of digital media and the quality of students' professional communication is very strong. Interactive media can build active, contextual, and reflective learning experiences. Students not only learn what to say but also how to say it correctly in a clinical context. The speaking skills developed through this digital interaction are relevant and applicable in daily physiotherapy practice. Thus, interactive digital media becomes one of the effective strategies in preparing students to face

communication challenges in the professional world. These findings support the integration of technology as part of a communication competency-based curriculum.

CONCLUSION

Based on the research results, the use of interactive digital media has proven effective in improving the speaking skills of physiotherapy students at Muhammadiyah University Pringsewu. The improvement was significantly observed in the comparison of pre-test and post-test results, both statistically and practically. Students showed improvement in aspects of speech clarity, information delivery structure, and professional language use. In addition, students' confidence in speaking increased with their engagement in simulation media and interactive exercises. Digital media also successfully creates a more engaging, contextual, and practice-oriented learning experience. Thus, the integration of interactive digital media in the learning process has proven to enhance students' communication competencies.

Furthermore, students' responses to the use of digital media are very positive, marked by a high level of satisfaction regarding ease of access, engagement, and perceived benefits. Students find this method more enjoyable and meaningful compared to conventional methods. The interactivity of the media not only helps them understand the material but also encourages reflection, independent learning, and readiness to face the job market. The close relationship between engagement in interactive media and the improvement of professional communication quality indicates that learning technology plays a strategic role in higher education, particularly in the health sector. Therefore, the use of interactive digital media deserves to be considered as a permanent part of the learning strategy to develop essential communication skills for prospective physiotherapists.

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