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RESEARCH PAPER

Multimedia's Impact on Education: A Study on the Teaching and Learning Process

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ABSTRACT

This study investigates the use of multimedia in improving the teaching and learning process in Pakistan. Information and communication technology has an impact on both student involvement and academic achievement. The study also investigates the possible obstacles and constraints of incorporating multimedia into Pakistan's education system. The findings of the study will be used to inform future policy decisions and educational practices in Pakistan's education system, ultimately aiming to improve academic performance.This study's evidence was gathered from primary sources, including staff and students from public and private educational institutions. The study's evidence was gathered from primary sources, including staff and students from public and private educational institutions, in order to ensure comprehensive and diverse data. The comprehensive and diverse data collected from these primary sources was crucial for the study's findings. Without this data, the study would not have been able to accurately analyze and draw conclusions.

Keywords: Education, Multimedia, Staff and Public, Students Learning, Teacher Training

Introduction

In The term multimedia is relatively new and refers to the use of several media, such as text, voice, picture, and video, to transmit information in a digital format. Multimedia has become increasingly popular in recent years. It is now commonly used in various industries and fields, such as entertainment, education, marketing, and communication technology(Kuchai et al., 2022). Advances in information and communication technologies are significantly changing teaching and learning processes and creating new learning possibilities. These developments are influencing the educational environment and challenging established classroom arrangements. They are also transforming the role of teachers and students in the learning process(Haddad & Draxler, 2002). Multimedia technology is progressively affecting the worldwide educational arena, and many schools and institutions are using digital technology to improve the teaching and learning processes of both students and teachers. This transition is motivated by an awareness of the multiple benefits that multimedia technology provides to education, such as improved student involvement and access to a wide range of instructional resources(Buabeng-Andoh, 2012).

Multimedia in Education

Multimedia refers to the combination of many types of media. This covers text, images, audio, and video. Multimedia is utilized in various fields, such as entertainment, education, and communication. Multimedia allows for a more engaging and interactive experience for users. It allows users to actively participate in and immerse themselves in the content(Victoria, Roldan, & Roldan, 2007). A number of studies have found that multimedia increases student performance and retention when compared to traditional teaching techniques. This suggests that incorporating multimedia into education can have significant benefits. It indicates that multimedia can enhance the learning experience for

students. It also implies that multimedia can improve student engagement and comprehension. Overall, the inclusion of multimedia in education is crucial for modern teaching methods(Cavanagh & Kiersch, 2023). Papaioannou and Laparidis, 2005 found that Greek primary students who received physical education instruction through multimedia computer-assisted instruction performed better than those who received instruction in a traditional manner(Siskos, Antoniou, Papaioannou, & Laparidis, 2005). Omagbemi, Ogunbote, & Adekunmisi suggests that multimedia content can foster creativity and encourage active participation in the learning process. By incorporating visual and auditory elements, students are more likely to stay focused and actively engage with the material. This can lead to a deeper understanding of the subject matter and improved overall academic performance (Omagbemi, Ogunbote, & Adekunmisi, 2004).

Literature Review

The use of multimedia technologies in education demands teacher training to keep up with the current level of information technology in society. This training should include how to properly incorporate multimedia technologies in the classroom and how to effectively engage students and enhance their learning experience(Kotiash et al., 2022). According to Muxtarova that educational information technology aims to enhance the learning experience by incorporating interactive and engaging multimedia tools. It also seeks to empower educators with the necessary skills to effectively integrate technology into their teaching methods and adapt to the ever-evolving digital landscape. This can lead to greater student engagement and improved educational outcomes(Muxtarova, 2021). Rahmonova contended that higher education institutions produce innovative professors who can use multimedia teaching tools to engage and enhance student engagement in the classroom. This will help students improve their critical thinking abilities and prepare them for the current workforce. Furthermore, these teachers may include real-world examples to make the learning experience more practical and relevant (Rahmonova, 2021). Ponomareva emphasizes the need to visualize instructional content when teaching younger children, and multimedia learning tools are one of the most effective ways to provide a visual approach to learning. Multimedia learning tools offer a diverse set of visual materials to engage and encourage younger pupils in their learning journey. They may comprise films, graphics, interactive games, and simulations. These tools can help pupils grasp complicated topics and remember information more effectively(Ponomareva, 2021). Teachers develop a new skill: employing multimedia-based learning settings. Aside from having a solid knowledge base, teachers give pedagogical guidance, leading students' search for information and encouraging their continual process of questioning. This helps students become active learners and critical thinkers. They are able to develop their own opinions and perspectives on different topics(Andresen & van den Brink, 2002). In addition, teachers also foster collaboration among students by creating opportunities for group discussions and projects. By working together, students learn to listen to different viewpoints and appreciate diverse perspectives, enhancing their ability to think critically and engage in meaningful dialogue. Furthermore, teachers ensure that multimedia resources are used effectively, selecting materials that are relevant and engaging to students' interests and learning styles. This helps create a dynamic learning environment that promotes curiosity and motivation among students (Vagg, Balta, Bolger, & Lone, 2020).

Material and Methods

The research focused on the use of multimedia in teaching and learning. The study followed a descriptive survey approach. A questionnaire was designed to collect information from respondents. This study comprised students from the Faculty of Education and the Faculty of Social Science from different universities of Sindh. The study involved 713 students. A basic random sampling approach was used. To reduce prejudice, the fundamental random sampling technique assures that all members have an equal chance of being selected. A total of 713 students were surveyed, with 143 representing 20% of the

population and 95 from the Faculty of Education. The researchers obtained 93 completed surveys.

Results and Discussion

Data analysis was based on respondent responses and a simple percentage to address research questions.

Table 1
Distribution of Respondents Based On Gender

Items	Frequency (n=93)	Percentage (%)
Male	39	41.9
Female	54	58.1
Total	93	100

Table 1: indicates that 39 (41.9%) respondents were men and 54 (58.1%) were women. This indicates that the majority of respondents were female.

Table 2
Respondents' age-based distribution

Items	Frequency (n=93)	Percentage (%)
16 - 20years	27	29.0
21 – 25years	39	41.9
26 – 30years	21	22.6
31 - 35years	6	6.5
Total	93	100

Table 2: indicates that 27 (29.0%) of respondents were between the ages of 16 and 20. Of the respondents, 39 (41.9%) were between the ages of 21 and 25, 21 (22.6%) were between the ages of 26 and 30, and 6 (6.5%) were between the ages of 31 and 35. The bulk of responses are 21–25 years old.

Table 3
Shows the respondents' faculty distribution

Items	Frequency (n=93)	Percentage (%)
Education	38	40.9
Social Sciences	55	59.1
Total	93	100

Table 3 shows that 38, (40.9%) of respondents were from the Faculty of Education, while 55, (59.1%) were from the Faculty of Social Sciences. This suggests that the majority of respondents were from the Faculty of Social Sciences.

Table 4
Based on responses to how frequently instructors use multimedia to teach

Items	Frequency (n=93)	Percentage (%)
Very Often	16	17.2
Often	11	11.8
Unknown	29	31.2
Not very often	31	31.33
Not often	6	6.5
Total	93	100

Table 4 shows how frequently lecturers use multimedia to teach: 16 (17.2%) replied "very often," 11 (11.8%) stated "often," and 29 (31.2%) said "unknown." 31 (33.3%) respondents replied "not very often," while six (6.5%) said "not often." The majority of

respondents indicated that multimedia are not frequently used for teaching in the department.

Discussion

How, in general, is instructional multimedia used for teaching and learning? The study found that projectors and computers were accessible for instructional multimedia at the respondents' individual faculties. The majority of students reported that their department had projectors and laptops available, but they did not use them. The study also revealed that instructional multimedia was primarily used in classrooms for delivering lectures and presentations. However, it was observed that students preferred traditional teaching methods and showed limited interest in utilizing instructional multimedia tools for their learning. The survey found that most respondents were unaware of the precise number of multimedia sets available in the department. There are one to five open positions in the department. The department does not frequently utilize computers for teaching, according to the majority of respondents. Danebeth's (2013) study on the effects of multi-media education on student learning discovered that, while instructional facilities influence learning, they also have a substantial effect on academic achievement in the experimental group. Multimedia training produced better learning results than traditional teaching approaches. Nasaruddin and Ismayatim's (2013) study on the factors influencing the use of multimedia teaching tools in schools found that the design and technical functionality of the software play a significant role. They discovered that teachers preferred software that was user-friendly and had a wide range of features to enhance the learning experience. Additionally, the study highlighted the importance of regular software updates to ensure compatibility with evolving technology. The researchers also noted that the availability of technical support and training for teachers was crucial to maximizing the use of multimedia teaching tools. They emphasized that schools should invest in providing ongoing support and professional development opportunities to ensure teachers feel confident and competent in utilizing these tools effectively.

Conclusion

Multimedia approaches optimize pedagogic difficulties with considerable educational impact and can be utilized to increase learning effectiveness, reduce learning time, and widen and deepen the problem scope. Multimedia approaches are therefore valuable tools in enhancing overall learning outcomes by providing engaging and interactive learning experiences. Simultaneously, it is critical to recognize in the field of pedagogical research, particularly in the context of domestic education, that the potential of computer-based teaching aids, particularly multimedia, is sometimes underestimated. This is mostly because the concept of multimedia as a teaching tool is complex and has not undergone adequate theoretical development. In conclusion, we emphasize that the continued incorporation of multimedia into the teaching and learning process has a substantial influence on student development. This research investigated the use of multimedia in the classroom as a method of providing students with experience in a concentrated learning environment while also increasing their ability for higher-order thinking and problem solving. The findings lead us to the conclusion that a multimedia-oriented method may be built, and that incorporating multimedia into the teaching and learning process improves the traditional conventional technique. The course's multimedia project allowed students to practice applying critical and creative thinking to design and development problems, cooperate with one another to gain team-building experience, and deal with real-world problem-solving scenarios. They may use this student-centered learning style to develop their own knowledge and comprehension while also choosing what they want to learn.

Recommendations

The Pakistani education system should support information technology integration at universities as a key project for education development. This includes allocating funds for massive Internet connectivity and equipment purchases. It is important that university professors receive training and expand their abilities when using high-tech facilities. One of the challenges for today's lecturers is effectively integrating technology into the curriculum. ICT training should be provided to university professors and personnel to integrate technology into education.

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