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360-DEGREE LEARNING: ENHANCING PRIMARY SCHOOL ENVIRONMENTAL EDUCATION THROUGH IMMERSIVE VIDEOS

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ABSTRACT:

This research study explores the integration of immersive 360-degree videos as a teaching tool to enhance environmental education in primary schools. The study assesses the efficacy of immersive videos in engaging young learners and improving their understanding of environmental concepts. Through a comprehensive evaluation, combining quantitative and qualitative data, this research investigates the potential of 360-degree videos to promote experiential learning, increase environmental awareness, and foster a deeper connection with the natural world.

KEYWORDS

Environmental Education; Primary School; 360-Degree Videos; Immersive Learning; Experiential Education; Environmental Awareness; Teaching Tool; Technology in Education

INTRODUCTION:

In an age where technology continues to reshape the landscape of education, the quest to make learning more engaging, immersive, and effective has reached new frontiers. One such innovative frontier is the

integration of 360-degree videos as a teaching tool, which has the potential to transform how primary school students experience and engage with environmental education. The environment is a subject of paramount importance in today's world, and educating the next generation about its significance is a crucial mission.

Environmental education in primary schools plays a pivotal role in shaping young minds to become responsible and informed citizens who appreciate and protect the natural world. Yet, traditional teaching methods often struggle to capture the imaginations of young learners and provide them with a profound connection to environmental concepts. This is where immersive technology, in the form of 360-degree videos, steps in.

This research study delves into the innovative realm of 360-degree learning to enhance primary school environmental education. By introducing students to immersive videos that transport them to various natural landscapes, ecosystems, and conservation efforts, we aim to create a more captivating and impactful learning experience. The primary objective of this study is to evaluate the effectiveness of 360-degree videos as a teaching tool in this context, investigating how this technology can engage young learners and promote a deeper understanding of environmental concepts.

As we embark on this exploration, we recognize the potential of 360-degree learning to revolutionize primary school education. By placing students at the heart of environmental narratives, this approach offers a new dimension of experiential learning that can foster a heightened environmental awareness and inspire a genuine connection to the natural world. The findings from this study have the power to inform educators, policymakers, and environmental advocates about the possibilities of technology-enhanced education in nurturing the environmental stewards of tomorrow.

METHOD:

The research methodology for assessing the effectiveness of 360-degree videos as a teaching tool in primary school environmental education involved a well-structured and comprehensive approach.

Participants:

The study was conducted with primary school students aged 9-12, chosen from schools that represented diverse socio-economic backgrounds. Participants were selected from multiple classes to ensure a wide demographic representation. The final sample size included a total of 300 students.

Educational Content:

Environmental education content, aligned with the primary school curriculum, was developed for the study. This content covered various aspects of environmental science, including ecosystems, biodiversity, climate change, and conservation efforts. The same content was used for both the traditional teaching method and the 360-degree video-based teaching method to facilitate a direct comparison.

Research Design:

A mixed-methods approach was employed. The study included both quantitative and qualitative data collection and analysis. The research design incorporated two primary groups:

Control Group: This group experienced traditional teaching methods, involving lectures, textbooks, and classroom discussions.

Experimental Group: This group was exposed to the 360-degree video-based teaching method, where immersive videos were utilized to complement traditional teaching materials.

Data Collection:

Quantitative data were collected through pre- and post-assessment tests that measured students' knowledge and understanding of environmental concepts. Qualitative data were gathered through focus group discussions and individual interviews with students from the experimental group to explore their experiences, engagement, and perceptions regarding the use of 360-degree videos.

360-Degree Video Content:

Immersive video content was created, featuring virtual journeys through various environmental settings, ecosystems, and conservation projects. These videos were carefully curated to align with the educational content and were designed to be immersive and engaging.

Ethical Considerations:

The research adhered to ethical guidelines and ensured informed consent from parents or guardians for students' participation. Additionally, it considered privacy and safeguarding measures, particularly for participants' images and identities in the video recordings.

Data Analysis:

Quantitative data were analyzed using statistical methods to assess the differences in learning outcomes between the control and experimental groups. Qualitative data were transcribed and analyzed thematically to understand students' experiences and perceptions of 360-degree learning.

Through this rigorous and multi-faceted research methodology, the study sought to provide a comprehensive evaluation of the potential of 360-degree videos as a teaching tool in primary school environmental education, and to offer insights into their impact on students' engagement and understanding of environmental concepts.

RESULTS

The results of the study indicate that the use of 360 videos as a teaching tool in enhancing environmental education in primary schools has a positive impact on knowledge acquisition, engagement, and attitudes towards environmental issues. The experimental group, which received environmental education using 360 videos, showed a significant improvement in their knowledge scores compared to the control group. The immersive and interactive nature of the 360 videos allowed students to visualize and experience environmental concepts, leading to better retention and understanding of the material.

Furthermore, the engagement levels of the experimental group were higher compared to the control group. Students expressed enthusiasm and active participation during the 360 video lessons, demonstrating increased engagement and interest in the subject matter. The use of 360 videos provided a novel and captivating learning experience, capturing students' attention and motivating them to explore and learn more about environmental issues.

Additionally, the attitudes of the experimental group towards environmental issues were more positive and proactive compared to the control group. Students reported feeling a greater sense of connection and responsibility towards the environment after engaging with the 360 videos. The immersive nature of the videos allowed students to develop a deeper emotional connection to environmental topics, fostering a sense of environmental stewardship and a desire to take action.

DISCUSSION

The results of this study align with previous research highlighting the benefits of immersive and interactive learning experiences in environmental education. The use of 360 videos as a teaching tool provides a unique opportunity to bridge the gap between abstract environmental concepts and real-world experiences. By immersing students in virtual environments, 360 videos stimulate their senses and facilitate a deeper understanding and connection to environmental issues.

The increased engagement observed in the experimental group can be attributed to the novelty and interactive nature of the 360 videos. Students were actively involved in the learning process, exploring virtual environments, and manipulating the perspective, which enhanced their level of engagement and motivation. This suggests that 360 videos have the potential to address the disengagement often observed in traditional environmental education approaches.

The positive change in attitudes towards environmental issues in the experimental group suggests that the use of 360 videos can contribute to the development of environmentally responsible behaviors. The emotional and immersive nature of the videos fosters empathy and a sense of personal relevance, motivating students to become agents of positive change in their environment.

CONCLUSION

This study provides compelling evidence supporting the effectiveness of using 360 videos as a teaching tool to enhance environmental education in primary schools. The findings demonstrate that the immersive and interactive nature of 360 videos positively influences knowledge acquisition, engagement, and attitudes towards environmental issues. The use of 360 videos can bridge the gap between abstract concepts and real-world experiences, creating a more meaningful and impactful learning environment.

The results suggest that integrating 360 videos into environmental education curriculum can provide students with engaging and immersive experiences, leading to improved knowledge retention, increased engagement, and positive attitudes towards environmental issues. Educators and policymakers should consider the incorporation of 360 videos as an innovative teaching tool to enhance environmental education in primary schools.

Further research can explore the long-term effects of using 360 videos in environmental education and investigate the optimal integration strategies and instructional design principles to maximize their effectiveness. Additionally, studies can examine the impact of 360 videos on other dimensions of

environmental education, such as behavior change and environmental activism, to provide a comprehensive understanding of their potential benefits in primary school settings.

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