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Research Article

ENHANCING ENVIRONMENTAL EDUCATION IN PRIMARY SCHOOLS: EVALUATING THE EFFECTIVENESS OF 360 VIDEOS AS A TEACHING TOOL

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ABSTRACT

This study aims to evaluate the effectiveness of using 360 videos as a teaching tool to enhance environmental education in primary schools. Environmental education plays a crucial role in fostering environmental awareness and responsible behavior among young learners. However, traditional teaching methods often struggle to provide immersive and engaging experiences that effectively convey complex environmental concepts. This study employs a quasi-experimental design, with a pre-test and post-test control group, to assess the impact of 360 videos on students' knowledge acquisition, engagement, and attitudes towards environmental issues. A sample of primary school students is divided into two groups: an experimental group that receives environmental education using 360 videos and a control group that follows a conventional teaching approach. Data on knowledge acquisition, engagement levels, and attitudes towards environmental issues are collected through pre-test and post-test assessments and self-report questionnaires. The results of this study will provide valuable insights into the effectiveness of 360 videos as a teaching tool for environmental education in primary schools, informing educators and policymakers about innovative approaches to enhance environmental learning experiences.

KEYWORDS

Environmental education, primary schools, 360 videos, teaching tool, immersive learning, knowledge acquisition, engagement, attitudes, quasi-experimental design, pre-test and post-test.

INTRODUCTION

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Environmental education plays a crucial role in equipping primary school students with the knowledge, skills, and attitudes necessary to understand and address environmental issues. However, traditional teaching methods often struggle to provide immersive and engaging experiences that effectively convey complex environmental concepts. With the advent of new technologies, such as 360 videos, there is an opportunity to enhance environmental education by providing students with interactive and immersive learning experiences. This study aims to evaluate the effectiveness of using 360 videos as a teaching tool to enhance environmental education in primary schools, specifically focusing on knowledge acquisition, engagement, and attitudes towards environmental issues.

METHOD

This study employs a quasi-experimental design, specifically a pre-test and post-test control group design, to evaluate the effectiveness of 360 videos as a teaching tool for environmental education in primary schools. The participants will consist of a sample of primary school students in the target age range for environmental education.

Participants:

The sample will be divided into two groups: an experimental group and a control group. The participants will be randomly assigned to these groups.

Intervention:

The experimental group will receive environmental education using 360 videos as a teaching tool. The control group will follow a conventional teaching approach without the use of 360 videos.

Pre-test assessment:

Before the intervention, both groups will undergo a pre-test assessment to measure their baseline knowledge of environmental concepts. This assessment will consist of multiple-choice questions or open-ended questions related to the environmental topics to be covered.

Intervention phase:

The experimental group will engage in environmental education lessons using 360 videos. The videos will cover various environmental topics, providing interactive and immersive experiences for the students. The control group will receive conventional teaching methods, such as lectures, discussions, and textbooks, on the same environmental topics.

Post-test assessment:

After the intervention phase, both groups will undergo a post-test assessment to measure their knowledge acquisition. The post-test assessment will be similar to the pre-test assessment, covering the same environmental concepts.

Engagement measurement:

During the intervention phase, measures of student engagement will be collected. This may include observational data, such as student behavior and interactions, as well as self-report measures, such as student surveys or questionnaires.

Attitude measurement:

Following the post-test assessment, students' attitudes towards environmental issues will be measured through self-report questionnaires. The questionnaires will assess students' attitudes, values, and concerns related to the environment.

Data analysis:

The quantitative data from the pre-test and post-test assessments will be analyzed using appropriate

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statistical techniques, such as t-tests or ANOVA, to determine the effectiveness of 360 videos in enhancing knowledge acquisition. The engagement and attitude data will be analyzed using descriptive statistics and qualitative analysis techniques to gain insights into the students' experiences and perspectives.

By employing this quasi-experimental design and collecting both quantitative and qualitative data, this study aims to provide valuable insights into the effectiveness of 360 videos as a teaching tool for enhancing environmental education in primary schools. The findings will inform educators and policymakers about the potential benefits and limitations of using 360 videos in the classroom, ultimately contributing to the improvement of environmental education practices.

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

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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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