ISSN: 2773-7055
Proceedings of 3rd International Research Conference
Institute of Technology, University of Moratuwa
December 18, 2024

ASSESSING THE ROLE OF INTERACTIVE SMART BOARDS IN ENHANCING SUSTAINABILITY IN PRIMARY EDUCATION: A REVIEW OF IMPLEMENTATION STRATEGIES AND EDUCATIONAL OUTCOMES IN SRILANKAN CLASSROOMS

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ABSTRACT: This study was conducted to evaluate the outcomes of interactive smart boards in primary education in Sri Lanka focusing on their effectiveness in the teaching and learning process as well as their sustainability. The study utilized a combination of quantitative surveys and qualitative interviews with teachers and students from various schools. The results indicated that smart boards play a vital role in enhancing student interaction through interactive, multimedia-rich lessons that cater to different learning modes and promote collaboration. Findings highlight that these interactive smartboards facilitate more dynamic lessons and provide broader access to education materials. Furthermore, the findings underscore smart boards as a tool for educational sustainability that encourage reduced paper usage and more efficient resource management. However, the research reveals some downsides, particularly regarding technical difficulties and the importance of adequate training. There is a risk that teachers may become overly reliant on technology. Overall, the research finds that smart boards provide significant benefits - nearly 90% for education and sustainability in Sri Lankan primary schools. Yet, these advantages are often frustrated by technical issues as well as inadequate training. Despite the challenges associated with using smart boards to modernize education and adopt sustainable practices, they present significant opportunities for achieving these goals.

Keywords: primary education, smart board, sustainability in education, technology

1. INTRODUCTION

Over the last several years, the growth of information and communication technologies (ICT) in education has become more and more critical in determining the methods of teaching and learning. Among the various technologies in use today, the interactive smart board (ISB) stands out as one of the most revolutionary devices. Smart boards were first used in education in the late 1990s (Beeland, 2002). These devices, apart from creating an exciting learning atmosphere, are likely to improve the effectiveness of learning processes. With the further development of educational facilities in Sri Lanka, it is essential to explore how such technologies can be utilized in primary education to promote sustainable development. Effective usage of any technology relies on several factors, one of which is teacher proficiency. If a teacher does not know how to use a SB, s/he will not use it during the learning process)Adagideli, 2019).

This study looks at how interactive smart boards play a key role in boosting sustainability in primary classrooms in Sri Lankan. In this context, sustainability not only means keeping educational practices going for a long time but also the ability to help students learn and adapt in our rapidly changing digital world. The research investigates how schools implement these smart boards and the outcomes they achieve. Its aim is to evaluate the effectiveness of these boards and their potential to enhance the sustainability of teaching practices. SB with thier multiple functions offer numerous benefits for education. These include interactive lessons, immediate feedback and collaborative learning. However, to maximize their effectiveness in classrooms, robust planning and support systems are essential.

There are many advantages of SB. One significant benefit is the ease of connecting smart boards to the internet, allowing access to information from various resources. This internet connectivity enables teachers to obtain expert opinions from field specialists around the world without needing to be in the same location. Additionally, teachers can scan any part of a textbook and display it on the screen using the smart board, which saves both time and resources (Adagideli, 2019). The touch

screen technology of smart boards offers greater flexibility in presenting materials. It provides a sample workspace for hands-on activities with various multimedia resources, featuring a display surface large enough to encourage high levels of student interaction (Abdullah, 2020). To meet the evolving needs of Sri Lankan schools, the number of smart classrooms must be increased (Vijayabaskar, 2022).

This study will focus on the primary section of Sri Lankan schools examining the integration of interactive smart boards into teaching methods and their impact on various aspects on learning. The significance of this study lies in its potential to make us understand how interactive smart boards can be used to promote sustainability in schools. By analyzing current practices, challenges, and successes, this research hopes to give useful insights to teachers, decision-makers and stakeholders involved in incorporating technology into classrooms. In brief, this study aims to understand the role of interactive smart boards in enhancing sustainability for primary education in Sri Lanka. The study aims to derive recommendations from a comprehensive assessment of implementation strategies and educational outcomes that can facilitate the successful integration of this technology offering an enhanced, sustainable academic experience for students in the long run.

This study aims to achieve two main objectives:

i. To examine the effectiveness of interactive smart boards in primary education settings in Sri Lanka.
ii. To identify the challenges and facilities associated with the use of ISBs in primary education.

2. METHODOLOGY

The sample for the study consisted of 40 primary school teachers working in different districts in Sri Lanka. These teachers participated voluntarily, and the sample predominantly included individuals aged between 25 and 40 years. Additionally, 10 students comprising 5 males and 5 females were selected from grade five students in Sri Lankan primary schools. Primary data for this study was collected through a google questionnaire form which focused on collecting data in four identified sections:-(1) Demographic Information (2) Implementation strategies (3) Student interaction and Teacher Performance (4) Challenges and Recommendations. At the end of the study, interviews were conducted to gather opinions from both students and teachers. A total of 30 teachers participated in the quantitative survey while 10 teachers participated in the interview. The questions were designed based on expert assessment. The questionnaires were created prior to conducting a trial application with a primary school teacher. Two qualitative interviews were conducted for teachers and students. Teachers' and students' responses to the questionnaire were analyzed using frequencies and percentages. The responses were analyzed using Microsoft Office and Excel 365 where percentages were calculated and transformed into tables to enhance readability.

3. RESULTS AND DISCUSSION

In this section, the responses of teachers to the quantitative and qualitative survey questionnaires are discussed.

3.1 Quantitative Survey for the teachers

3.1.1 Demographic Information

Although 90% of schools have smart boards, only 56.6% use them for primary students. Among those, only 17.9% of teachers use them daily, 25% use them weekly, 3.6% use them monthly, and 17.9% of teachers rarely use them.

3.1.2 Implementation Strategies

According to data, only 6.7% of teachers receive training on smart boards weekly, 46.7% of teachers receive rarely. While 92.6% of teachers rated the availability of educational resources as good, 3.7% reported having limited access to resources. Additionally, 70.4% of teachers expressed satisfaction with technical support while 7.4% rated it as average and 22.2% reported being dissatisfied.

3.1.3 Student interaction and teacher performance

According to this section of the research, 96.7% of teachers believe that smart boards will improve student academic performance. Additionally, 95.5% of teachers feel that smart boards enhance student interaction in their classrooms. Teachers also report that 96.6% see a positive impact on student achievement and 96.6% have effectively used smart boards to teach environmental awareness and sustainability concepts.

3.1.4 Challenges and Recommendations

Regarding challenges, 89.7% of teachers believe that smart boards help develop students' critical thinking and problem-solving skills. However, 10.3% disagree with it. Many teachers report experiencing internet issues when using smart boards, and even when their school has a smart board, it is often not utilized.

3.2 Qualitative Interview for Teachers

During qualitative interviews with teachers, they indicated that paper usage will be reduced by nearly 90% using smart boards leading to more efficient teaching. They noted that nearly 80% might become too reliant on technology while around 20% disagreed with this perspective. Furthermore, teachers believe that smart boards will enhance nearly 90% of students' understanding of sustainability concepts and increase about 80% of students' knowledge of sustainable practices.

3.3 Qualitative Interview for Students

Interviews with 10 students revealed significant insights into the impact of Interactive Smart Boards. Nearly 90% of students reported that they actively participated in lessons when ISBs were utilized indicating a market improvement compared to traditional teaching methods. Students were also informed that interactive and multimedia-rich lessons enhance their overall learning experience.

4. CONCLUSION

This research will provide valuable insights into the role of interactive smart boards in enhancing sustainability in primary education. Findings suggest that SB is beneficial for teachers to teach and for students to learn. Therefore, smart boards need to be popularized in towns and villages schools.

Accordingly, infrastructure for the internet needs to be provided for the places where the internet infrastructure is absent or little. The internet infrastructure in schools needs to be improved. With a high-speed internet infrastructure, more online course activities can be applied on the smart board. SB in schools should be checked regularly to avoid crashes. As a result, interruptions in education in schools where the smart board is used can be prevented. One important point is that primary school teachers cannot use ISB professionally. Teachers may be supported with training by the experts on using smart boards. In-service training courses can be popularized and held frequently in order to increase the level of using a smart board. Moreover, lesson contents can be developed for teachers to make a course presentation on SB. By this way, teachers do not spend more time to prepare material for the SB.

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