

Using Multi-Touch Interactive Whiteboards by High School Teachers to Promote Active Student Participation in the Classroom

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EXECUTIVE SUMMARY

Teachers have seen that there is an increasing lack of student participation in the classrooms. The purpose of this research study was to discover how the use of interactive whiteboards by high school teachers affects participation in the classroom. The participants of this study were high school teachers. Data was collected using a digital questionnaire consisting of open-ended questions sent to the teacher participants, a focus group interview at the conclusion of the study, and a set of three teacher observations of classroom use of the interactive whiteboard. The results demonstrate the ability of interactive whiteboards to increase active participation by students. A secondary result showed a need for additional teacher training to show specific applications of interactive features. These results provide teachers of all subject areas meaningful ways to utilize the interactive whiteboard in a hands-on manner to increase active student participation during in-person lessons.

INTRODUCTION

The use of educational technology has proliferated since the introduction of the radio about a century ago (Purdue University, 2024). Technology, such as the interactive whiteboard (IWB), was heavily researched during its early stages of use in education; however, there has been a lack of research surrounding the effectiveness and type of use of the IWB in contemporary secondary education (Balta & Duran, 2015). Even though many teachers have them in their classroom, they are not being used to their fullest potential.

Studies have been conducted by Karsenti (2016) in Canada, Northcote et. al. (2010) in Australia, and Tatli and Kilic in Turkey (2014), none of which were contextualized in the United States, which is where the current problem of a lack of student participation was observed at Valley View High School (VVHS, name changed). The present study aimed to better understand the benefit of the hands-on uses of multi-touch IWBs to promote student involvement in the classroom. Specifically, the student interaction with the IWB in a physical manner by touching the board was examined for its ability to increase active participation in the classroom (e.g., standing up; moving throughout the classroom; changing their perception of materials, peers, and the teacher during lessons).

Background of the Problem

In the past ten years, there has been little research done within the United States regarding the use of IWBs as a physically interactive tool in the classroom. Northcote et al. (2010) suggested that heavy use of the IWB by the teacher can promote a teacher-centered learning environment over time, and further, cautioned that the potential of the boards to promote interactive teaching and learning is often overlooked. This raises the larger concern of whether IWBs are used interactively with students directly touching the board or just as a presentation device. This same issue was addressed by Tatli and Kilic (2016), who also discovered that educators were not using IWBs to their full, student-facing potential.

Context of the Local Problem

Valley View High School is located in a rural, Central New York community. Within this district, a lack of student involvement in classroom participation was identified as a reoccurring problem by faculty members over the past two years through surveys and professional development requests. The need for training surrounding the use and implementation of interactive IWBs in the classroom was attempted to be addressed through a professional development seminar presented by

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