



TECHNOLOGY IN EDUCATION: INNOVATION VS. USE

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ABSTRACT

This paper will explore through both self-reflection and a critical evaluation the use of the Interactive Whiteboard technology (IWB) within the setting of primary school science and mathematics education. It will explore the way in which we have engaged with the use of IWB in the classroom, as well as broader responses to it from the educational community. Finally, a critical evaluation of the ways in which the technology can be implemented in the class, and the consequences of that technology, will be discussed.

Keywords: Interactive Whiteboard Technology (Iwb), Script, Traditional Approach.

Introduction:

There are a range of responses to the introduction of IWB in classrooms from education research. Issues of training is another important point to consider for the broader educational community because it is not easy to move from traditional blackboard to the IWB technology. It is clear that the introduction of such different technologies to the classroom will require professional development. This is one of the most critical elements to the introduction of IWB.

Self Reflection

As a primary school educator in Saudi Arabia, I have had experiences with the use of IWB in primary classrooms, specifically in mathematics and science based programs. Certainly, the use of IWB in those types of classes is seen as beneficial because of the ability of the IWB to present in easy to read verbal form things such as graphs, tables, pictures, and mathematical formula. However, in the initial stages the use of the IWB was difficult and took some adjustment period. This time affected my traditional approach to teaching. The way that the IWB brings other dimensions to the classroom (Murcia, 2010) is something that requires rethinking about your normal teaching methods. Also, according to Murcia (2010) it is important in science education that students learn conceptually, not just focus on remembering facts. At this time in Saudi Arabia, the school is still more focused on fact learning, and so the IWB is not always used to its full advantage. We have found in this way that the use of IWB is a challenge. Finally, there are a range of technical skills that are needed to be able to use the IWB properly, and I have not always felt confident with these skills. This is an area that needs further development in my teaching context in Saudi Arabia.

Educational Community

There are a range of responses to the introduction of IWB

in classrooms from education research. According to Campbell and Kent (2010) even the placement of the IWB is something of consideration. This is because if they are not presented in the right area then they will not be a very effective teaching tool. Also, the use of IWB means that the classes need to be more interactive through the use of the multimedia aspect of the IWB (Holmes, 2009). This is another issue when trying to use this technology in a primary class setting as the interactivity with younger children is sometimes a difficult task. The use of IWB in science classes can help to improve access to online information, focus on science in society through the media, and create more visually impressive and interactive displays and activities (Murcia, 2008). Issues of training is another important point to consider for the broader educational community because it is not easy to move from traditional blackboard to the IWB technology. It is essential that adequate training be provided to teachers in relation to ICT in the classroom generally, and IWB specifically (Lai, 2010). Finding the time to complete such training within my own teaching experience has been a difficult task, as well as the school finding enough funds for both the IWB technology and the training needed is also a difficult challenge.

Critical Evaluation of Teaching & Technology Use

The introduction of IWB to primary school classrooms has been met with different responses from researchers. According to Holmes (2009) there has been a focus on the way that IWB does not change the traditional teaching method in classes, and is still focused on teacher centred methods. However, Holmes (2009) argues that students have responded to IWB positively because they feel the technology teaches them mathematical concepts from a range of perspectives. This is important because it changes the traditional view of science and mathematics. In a study by Serow and Callingham (2008) they found that the use of IWB in primary mathematics classes meant that students

found the IWB visually impressive, but this did not always translate to deep learning. Also, this study points out the issue of needing appropriate training and infrastructure (Serow and Callingham, 2008).

It is clear that the introduction of such different technologies to the classroom will require professional development. This is one of the most critical elements to the introduction of IWB. Serow and Callingham (2008) have found that teachers needed time just to play with the IWB in order to be familiar with it, as well as really improve their planning for classes because it challenges traditional methods. Winzenried et al. (2010) have suggested that this is actually a 'pedagogical transformation', and this will take a long time to manage in schools. Also, because of the potential for multi-modal presentations with IWB (Murcia, 2010) thinking and planning classes becomes even more relevant. This is because a following a 'script' can become important in this context, and so, bringing different multimedia resources into the lesson plan requires more organisation and understanding of the technologies and the content by the teacher (Murcia, 2010). However, Winzenried et al. (2010) have suggested that this transformation can occur step by step, and over time, and therefore, are very supportive of the use of IWB because it does not have to present a challenge to teachers with established teaching methods.

Finally, the introduction of IWB raises questions about teacher's approaches to ICT in the classroom. It is important that teachers are open minded to such new technologies. Partly this is because with the new technologies, teachers will be required to increase their preparation time because they often will look for new and online resources to suit the new technology (Winzenried et al., 2010). Again, this is an issue related to professional development and educational organisation. This is important for schools to consider because it needs to be factored into workloads and working hours. The potential for positive outcomes from the use of IWB is high, but requires adequate funding, resources, time, infrastructure and patience from students, teachers and schools.

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