Chapter 17
An Innovative Way of Learning through the Use of the Interactive Whiteboard within a Cooperative Learning Context

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ABSTRACT

Over the last ten years, advancement in technology has increased two-fold. Fortunately, this advancement has started to filter down into the school education system. The recent introduction of the Interactive Whiteboard (IWB) in schools has prompted teachers to raise questions, which not only tackle critical doubts, but also initiate interest and curiosity. The most common questions concern the real potential of this tool to enhance learning, motivation, and attention of students. Moreover, this innovative tool has posed a new problem: how to integrate it into the didactic process? This chapter presents an example of a technology-learning environment, based on the social-constructivist approach, where the IWB has been integrated and its effects through research.

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INTRODUCTION

School plays a central role in the education of students and helps them to fully develop all their original features. The National Guidelines for the Curriculum (2007) states that teachers have the task of defining and implementing educational and teaching strategies which should always take into consideration the uniqueness and complexity of each student.

In the last ten years, a new approach has been implemented in the didactic-pedagogy field: the socio-constructivist approach. This approach considers learning as an active, collaborative and situated process.

From this perspective, it becomes essential to use didactic methodologies which are based on working groups, such as the cooperative learning methodology.

Recently, the spread of new technologies in schools has challenged the traditional teaching method. In particular, the introduction of the Interactive Whiteboard (IWB) in the classroom presented teachers with a new problem: how to integrate this new tool to enhance the teaching-learning process?

The answer to this question is the key factor in an experience conducted in a primary school in Trentino (Northern Italy) where the IWB has been used through the cooperative learning methodology within a socio-constructivist approach.

In order to develop critical thinking about practice and the effects on the learning process through the use of the IWB within a socio-constructivist approach, this chapter raises the following important questions:

1. How could the IWB be used within a cooperative learning context?
2. How can a cooperative lesson be designed by integrating the IWB?
3. What are the effects of the use of the IWB within a cooperative learning context?

The study was carried out in a fifth class of the Gian Battista Borsieri primary school in Trentino Province. This school was built in 1953 and currently has 127 students and 13 teachers divided into seven classes.

Gian Battista Borsieri primary school, along with three other primary schools and two middle schools, is part of the Istitute of Civezzano which provides for students living in the Alta Valsugana in Trentino.

This geographical area is relatively well-known for its porphyry mines which employ most of the local population.

The overall objective of the experience is based on an attempt to identify guidelines to design a technology-learning environment where the use of the IWB enriches the teaching and learning process on both sides: students and teachers.

The specific aims concerned pupils and teachers. Regarding pupils, the goal was to create an environment where learning, motivation and metacognition were favoured and enhanced. As for teachers, the aim was to find methodological principles to integrate the IWB in order to actively involve students in classroom activities.

The project was the result of a collaboration between the primary school and the Free University of Bolzano.

The primary school participants were the students of the fifth class and their teachers. In particular, the second language teacher carried out all the activities organized for the technology-learning environment designed, while other two teachers helped and monitored the situation.

Representing the Free University of Bolzano, I designed the technology-learning environment, all the activities and collected data through statistical measurements. Furthermore, a University researcher overviewed all the experience.

In order to gather evidence and carry out a detailed study, quantitative and qualitative measurements were adopted. The quantitative measurements used were: learning test, QMS questionnaire