

Interactive Videoconferencing in Educational Settings: A Case in Primary Education

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ABSTRACT

This research analyzes the use of Interactive Videoconferencing in classroom, analyzing practice and attitudes of 37 teachers and professors from several countries in the first dimension. The second dimension analyzes innovative approaches and Collaborative Learning through Interactive Videoconferencing using “Skype” in a particular classroom in Spain. The main instruments in this process are a questionnaire and systematic observation. Teachers in sample note positive attitudes related to Interactive Videoconferencing implementation in educational settings with educational benefits related to digital competence, languages, collaborative learning and intercultural contents. Moreover, it is noteworthy that Project Based Learning using Interactive Videoconferencing enables collaboration, making decisions use of knowledge and sharing responsibilities.

KEYWORDS

Collaborative Learning, Design Based Research, Elementary Education, Interactive Videoconferencing, Project Based Learning

1. INTRODUCTION

Educational environments have been improving at the same time that new technologies have arrived at Education through a slow revolution. In this context, we can use resources that Educational Technology provides us, taking into account teaching methods and techniques in several environments where interaction design plays a central role by improving the learning process.

Pupils use new applications and devices through cooperation, coordination and student-centered approach, with interaction techniques in educative environments.

The present research proposes a Design-Based Research strategy in two dimensions, which improves the impact of interventions in educational processes and enables innovating in educational settings. Design-Based Research allows a systematic, interactive process focused on how students learn. This naturalistic approach aims to understanding the processes of learning through informed exploration, enactment, evaluation within a local context, and development of design principles. Through the DBR approach, we apply research mixed methods using a variety of tools and techniques in the intervention consistent with the research design. “It is perfectly logical for researchers to select and use differing methods, selecting them as they see the need, applying their findings to a reality that is both plural and unknown” (Maxcy, 2003, p. 59). The pilot project of this study was presented in IDEE conference 2014 (Sáez-López, 2014).

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2. THEORETICAL FRAMEWORK

Much has been written about the educational potential of Interactive Videoconferencing. Several studies present positive evidence regarding the use of Interactive Videoconferencing in educational contexts are enhanced (Ertl, Fischer, & Mandl, 2008; Gerstein, 2000; Knipe & Lee, 2002; Sáez-López & Ruiz-Gallardo, 2013). From an intercultural perspective, there are benefits from interactions between students from different nationalities through virtual learning environments, interactive videoconferencing and other communication tools, as Edmodo (Sáez-López, Leo, & Miyata, 2013) or “Skype”, enables enrichment and interaction in the process to create and share content.

Educational processes are framed in basic principles from the perspective of constructivism and sociocultural theory (Vygotsky, 1978) the interaction between the social and cultural context the educational activity and situated learning (Brown, Collins, & Duguid, 1989; Wenger & Snyder, 2000). Significant Prior learning and learning is important from the perspective of other classic authors taken into account in this pedagogical design and collaborative learning through critical thinking, discovery learning (Ausubel 1978) and Project Based Learning (Jonassen, 1977).

Activities developed by IVC can have a clear multicultural approach (Ligorio & Veermans 2005; Robinson 2009; Thurston 2004) and extend the learning community to geographically distant individuals, familiarising students with new cultural experiences in an innovative way (Anastasiades, Filippousis, Karvunis, Siakas, Tomazinakis, Giza, & Mastoraki, 2010), while making them more able to appreciate the perspectives of others, making them understand and relate deeper aspects and not just isolated and disconnected knowledge (Thurston 2004).

Interactive Videoconference gives a chance to create activities in which students learn languages. Skype provides a unique opportunity, connecting with people from all around the world to learn languages with native speakers. Advantages in this sense have been described in previous research (Eaton 2010).

Moreover, Skype Call, a learning call model proposed by Tolisano (2011), establishes three phases:

1. **Pre-Activities:** In order to learn about the countries in the connection, students investigate the country they will connect with, and they manage information with the Internet, Google Earth and Google Maps. Students also prepare questions and organise groups and responsibilities. Activating prior knowledge (Ausubel 1978) reminds learners of what they already know and of their schemas, making connections with new content.
2. **During Call:** Students participate actively in the proposed activity, participating in interviews and collecting data and information related with the activity (writing or recording). Students can also present and share content if required. So, the activity is really intense and active due to students communicating, collecting and managing information and working collaboratively.
3. **Post-Activities:** Students evaluate, analyse and categorise all collected information. They create blog posts, work with video editing, images and videos and share and present the aforementioned content with parents and other audiences.

Tolisano (2011) presents an adequate IVC organisation for any Skype call so students are perfectly organised in groups, working several tasks collaboratively and managing information and content actively. In this learning context, interactions and activities enable significant learning and knowledge construction (Ausubel 1978; Bruner 1966; Vygotsky 1978). This proposal is effective when applying Project-Based Learning (Jonassen 1977) from student-centred learning.

There are several options when applying Interactive videoconferencing in primary school (Figure 1). Students can collaborate with other classes, no matter where they are, students could take a virtual field trip anywhere in the world, or they could attend a guest speaker via Videoconference (a writer, a scientist...). Another interesting and popular activity is the Mystery Skype Lesson, which is a global guessing game invented by teachers. The aim of the game is to guess the location of the

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