Technological Skills and Initial Teacher Training: An Exploratory Research on Attitudes of the Future Teachers Towards ICT

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ABSTRACT

This article describes how the use of education technology by those responsible for teacher training is one of the training issues that are often associated with the importance of enhancing didactic efficiency and the procedural and logistical difficulties associated with the instructional design that are identified as the main sources of concern in the professionalization of teachers and sometimes lead to unjustified assumptions about the very nature of the formation. Understanding attitudes towards ICT is important in determining whether future teachers’ perceptions about the advantages or disadvantages of using ICT in higher education may condition their proper use in teaching as this provides the basics for professional conduct that is most appropriate. The present article aims to investigate the attitudes of personal and didactic use of technologies and the perception of their digital skills in students attending the Degree Course in Primary Teacher Education at the University of Aquila Studies.

KEYWORDS

Attitudes, Higher Education, ICT, Teacher Training

1. INTRODUCTION

Research reveals that teachers’ attitudes towards technology use foster the didactic and effective use of technology at school (Ocak & Akdemir, 2008; Pelgrum, 2001). In fact, this attitude correlates with the level of trust (Atkins, Vasu, 2000) and beliefs, which are to be regarded as antecedents of attitudes towards behavior. The competence and the level of confidence in the use of ICTs are important factors for student learning, as well as learning how they support and improve learning tasks (Baggott La Velle, McFarlane, & Brawn, 2003). Convergence is that the beliefs of an individual (or cognitive responses) have a significant effect on intentional use and perceived competence about the attitude to the use of ICT (Agarwal & Karahanna, 2000; Venkatesh et al., 2003). In this regard, evaluating student attitudes towards technology (Bostock, 1998) plays an important role in removing obstacles and facilitating the acquisition process to structure goals, approach to the task, and course content in various ways.

Starting from the idea that, in order to improve the quality of teaching, beliefs, values, attitudes and perceptions of teachers should be taken into account, considered as intervening factors facilitating or preventing the didactic action, a research has been designed to provide an explanation of the

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motivations and the sense of using technologies within teaching and learning processes in a context of training for primary and secondary school teachers and to explore skills, attitudes and beliefs that guide the use of ICTs in these realities to understand how these factors can affect the didactic use of the future teachers. Therefore, the present work first focused on analyzing those research models aimed at exploring the motivation and inhibitory factors of ICT use in teacher training, and to tackle the relationship between general attitudes towards ICT, attitudes of use, and their practical use (Jackson, Ervin, Gardner, & Schmitt, 2001), as well as frequency of use, perceived importance, and use abilities (Sorgo, Verckovnik, & Kocijancic, 2010).

On the other hand, it is well known that the lack of appropriate ICT teaching-related training is a barrier to using technology in the school. Teachers justify the lack of use of ICT in the school by adducing reasons such as lack of time, which is often linked to factors such as the perception of scarce competence in the use of technologies. One of the main reasons often stated for not to employ the technologies in the teaching is in fact the one that such use takes a long time to plan and practice with the ICT, and try to integrate them into lessons. Literature shows that there is a significant relationship between attitudes towards ICT and their use in the educational system (Jackson, Ervin, Gardner, & Schmitt, 2001).

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In specific areas, for example, Sorgo, Verckovnik and Kocijancic (2010) find a high correlation between the frequency of use of a computer application for school work, perceived importance, and the ability of teachers to use some of the application in biology. The competence and level of confidence in the use of ICTs are decisive factors for learning (Baggott La Velle, McFarlane, & Brawn, 2003).

It is therefore evident that if the training of teachers was appropriate, ICT would be used more reliably and in less time by teachers. Even in the presence of high digital skills (Cuckle & Clarke, 2002) other important components would contribute to transferring them the latter to the school context, since ICT integration in teaching processes can be prevented by various barriers such as lack of equipment and access to the system, the lack of a specific technology, their cost, and so on (Sorgo, Verckovnik, & Kocijancic, 2010), but above all by bad attitudes and beliefs.

These are a number of aspects that can create negative attitudes towards ICT and their transformative potential, which today seems quite obvious, as it is not difficult to see how their use transforms their skills and thinking; see, for example, the case of scientific education where it seems that they help develop specific analytical skills (McFarlane & Friedler, 1998; Rogers & Wild, 1996) and, in their interactive use, support scientific reasoning.

Some studies then explain the positive influence of ICT use in the teaching process in terms of better understanding of the topics and concepts dealt with. For example, Stern, Barnea and Shauli (2008) see how students to which was provided a simulation with a molecular software show a better understanding of the particular model of the matter than students who had not been exposed to such simulation. Other work ascertains that the use of computer-assisted materials, if designed in accordance with student learning needs, play a central role in enhancing student success, favoring conceptual change and improving attitudes towards students some discipline (Kara & Yesilyurt, 2008; Yang & Heh, 2007). In all cases, attitudes remain a key element of initial teacher training to enhance and implement the personal and didactic use of ICT in school contexts.
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