



Pre-service Teachers' Use of ICT in Saudi Education: Literature Review

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ABSTRACT

Various technological tools are commonly used in education, due to rapid advances in the Information and Communications Technology (ICT) field. In recent years several institutions and schools in Saudi Arabia have started using ICT in the classroom. The purpose of this review is to assess the available literature to establish the extent of pre-service teachers' understanding of ICT and the level of ICT use in Saudi education, over the last decade. The findings show that pre-service teachers seem to lack the necessary level of technical knowledge to use ICT effectively in the classroom. The results also revealed several obstacles to the use of ICT in education, including a lack of training, a shortage of resources, and insufficient clarity of the Ministry of Education's policy regarding using ICT in teaching. In light of these findings, this study suggests that the Saudi educational environment be adapted and improved to make the adoption and use of ICT more successful. It also suggested that pre-service teachers receive training both at university and when they reach their schools on how to incorporate ICT successfully into their teaching and learning practice.

INTRODUCTION

The exponential growth of ICT in today's world has presented challenges in all spheres of life, including education (Al-Yousef, 2018). The perceived benefits of ICT mean that integrating modern ICT into the educational process is unavoidable. These benefits include the way that ICT makes information readily available at all times, that it can be quickly obtained, it saves time and enables communication between both trainers and students wherever they are and whenever they want (Alharbi, Alshabeb, Alshammari and Almaqrn, 2019). As a result, many educational institutions increasingly embrace ICT as a pedagogical tool that is likely to help pre-service teachers augment their teaching processes in the decades to come.

Additionally, pre-service teachers must stay up-to-date with developments during rapid technological and intellectual evolution, and a successful teacher must use ICT in the classroom

based on theories of learning and teaching in order to keep in touch with these changing theories. Although pre-service teachers use ICT in their daily lives (through social communication and some activities related to teaching their classes), it has been shown that they lack the necessary knowledge and skills to integrate ICT into formal teaching (Lei, 2009).

AIM AND OBJECTIVES

This review's main objective is to determine the extent to which pre-service teachers are aware of, and how effectively they use ICT in Saudi education, highlighting the many obstacles, constraints, and difficulties that pre-service teachers may encounter when implementing ICT in schools. It is hoped that a deeper and more comprehensive understanding of these issues will emerge, and thereby increase the effectiveness of ICT assimilation in Saudi Arabian schools.

RESEARCH QUESTION

The research question that directs this study is: to what extent and how effectively do pre-service teachers use ICT in Saudi education?

METHODOLOGY

Understanding pre-service teachers' use of ICT in education in Saudi Arabia requires a review of academic papers. As stated by Al-Emran, Mezhuyev, and Kamaludin (2018), review papers can comprehensively overview previous research, and focus on the implications made from those review results. Publications issued were used by several sources, including Google Scholar, the Saudi Digital Library, and Scopes. After applying the inclusion and exclusion criteria, as shown in table 1, some of those studies were found suitable for the purpose of this review, and these will be addressed in the section below.

Table 1: Selection criteria

Factor	Inclusion criteria	Exclusion criteria
Language	Arabic and English	Other
Publication date	2012 - 2022	Published prior to 2012
Search in Conditions of interest	Theses (either PhD or Master's) articles, journals, books The purpose of the study was to comprehend the pre-service teachers' usage of ICT and their familiarity with technological pedagogical content knowledge (TPACK) in Saudi education.	'Grey' literature
Geographical coverage	Saudi Arabia	-
Study design	Any design	-
Study methods	Any approaches	-

LITERATURE REVIEW

This section reviews some of the studies that have been conducted on the use of ICT by pre-service teachers in Saudi Arabia. Earlier studies revealed teachers' knowledge before they started teaching, regarding the use of ICT in the classroom, for example, the research that Robertson & Al-Zahrani conducted in 2012, looking at 325 pre-service Saudi teachers from the College of Education at King Abdulaziz University. The results revealed that the participants had high levels of knowledge regarding using ICT in teaching. Further conclusions from this

study include the fact that the availability of ICT, and pre-service teachers' access to these tools and training, effectively enhances their use of ICT in practice.

In a recent study, Alnujaidi (2021) looked at the content, teaching strategies, and Technology, Pedagogical and Content Knowledge (TPACK) levels of pre-service and in-service English as a Foreign Language (EFL) teachers in Saudi Arabia based on their gender, school Internet access, and technology training. This means that an examination of the pre-service and in-service TPACK levels of EFL teachers was undertaken using the Technology, Pedagogical, and Content Knowledge (TPACK) framework. The study included 111 pre-service teachers and 106 in-service EFL teachers, And the results showed that the pre-service teachers had an average TPACK level according to the criteria used in the framework. The findings also showed that in order to assist pre-service EFL teachers in successfully integrating ICT into their teaching process, pre-service teacher education programmes need to concentrate on the connections and interfaces between content, teaching methodology, and technology.

A 2021 study by Al Abiky aimed to identify the challenges for pre-service English language teachers while teaching online classes. He used semi-structured interviews with five pre-service English teachers. The study revealed that the focus should be on the effective integration of technology and the development of more aspects of teachers' competency in using technology in teaching.

In research published in 2016, Alblaihed sought to understand how Saudi Arabian pre-service primary school teachers felt about using ICT in the classroom, and to look at what they did. To establish the teachers' TPACK-related knowledge, a questionnaire was used, together with classroom observations and semi-structured interviews, in order to gather quantitative and qualitative data. The participants were divided into two groups based on the findings: those who used ICT in their teaching, and those who did not; and the results showed that pre-service teachers who used ICT relied on a conventional transfer technique for instruction. In addition, non-users were more successful at instructing their students than users, which finding bears further investigation.

Further, Abdullatif (2019) looked to identify pre-service teachers' technological knowledge (following the TPACK framework). 113 pre-service teachers participated in the questionnaire, and the results indicated that pre-service teachers had very low levels of technological knowledge; however, pre-service female teachers had more confidence and willingness to use ICT than did pre-service male teachers, and this is a finding that would be interesting to take further.

The aim of another study carried out by Alanazy and Alrusaiys (2021) was to reveal special education pre-service teachers' knowledge of using ICT in teaching, and the obstacles they faced when doing so. The study included 58 pre-service special education instructors from one of the educational institutions in Saudi Arabia. In addition, most participants had been using computers for more than eight years. The findings showed that even though these teachers can include ICT in their curriculum, they are also aware of the importance of gaining more training courses on using ICT in teaching. The outcomes also showed that there were other challenges around the service, including a lack of appropriately maintained ICT equipment.

Bugis & Larkins conducted a study in 2020 aiming to understand the willingness of pre-service teachers in Saudi Arabia to use ICT effectively in both the physical and virtual classroom environments. The survey methodology was additionally used to measure knowledge and behavioural variables considered important for the subsequent integration of ICT into teaching practice for pre-service teachers. One of the most noticeable findings is that pre-service teachers have lower digital competencies than their students. This calls for more training and workshops for pre-service teachers using ICT in teaching.

CONCLUSION AND RECOMMENDATIONS

This literature review's primary goal is to identify and provide information on the level of pre-service knowledge teachers have about ICT use, and the level of ICT use in Saudi education that has been reported in the literature between 2012 and 2022.

Previous research also showed that pre-service teachers did not have the appropriate level of technological knowledge when it came to using ICT in the classroom. It is evident that there are several challenges and impediments to the use of ICT in education, including a lack of training, lack of equipment, and lack of clarity in the policy of using technology in teaching.

The educational environment in Saudi Arabia should be remodelled to make it ideal for using ICT, because pre-service teachers currently live in a technologically sophisticated era, and most of them own contemporary technologies like mobile phones, iPads, etc. In addition, it is necessary to train pre-service teachers at both university and school levels in methods to integrate technology into teaching and learning practices.

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