THE PLACE OF TECHNOLOGY INTEGRATION IN SAUDI PRE-SERVICE TEACHER EDUCATION: MATCHING POLICY WITH PRACTICE

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ABSTRACT

The current study aims at understanding the place of technology integration in Saudi pre-service teacher education curriculum. To achieve this, a sequential qualitative approach was implemented in two main stages. First, national and curriculum policies were thematically analysed. Based on this, semi- structured interviews with three key policymakers were conducted in the second stage. Main findings associated with document analysis revealed the importance of technology in advancing the country at all levels including pre-service teachers' preparation. In contrary, pre-service teachers' curriculum policies, structure and guidelines severely lack the vision of the effective integration of technology. Progressive interviews with key policymakers showed that the effective integration of technology is considered a high priority in their mission. However, the strong tendency toward cultural-religious conservatism seems to slow the change. Based on the current study's findings in association with previous research, context-appropriate recommendations are proposed. These involve two main domains: enforcing innovative technology-based pedagogical models and developing effective leadership.

Keywords: Technology integration, Higher education, pre-service teacher education, Saudi Arabia

INTRODUCTION

Technology and educational development, especially in the current era, cannot be separated. Digital technologies are acknowledged as powerful tools in the development of education that is meaningful in the 21st century (Peeraer & Van Petegem, 2011; Norhayati & Siew, 2004). Optimising the use of technology can create competitive economies, construct knowledge-based societies, and enhance the process of innovative education (Bongo, 2005; Fong, 2009; Nasab & Aghaei, 2009; Poorfaraj, Samimi & Keshavarz, 2011; Norhayati & Siew, 2004).

A case in point, the new generation of children are extremely familiar with a variety of digital technologies in their daily lives (Prensky, 2001a, 2001b; Robertson, Fluck & Webb, 2007). Therefore, pre-service teacher education programs are now challenged to prepare teachers who can effectively understand, guide and teach these digitally competent children (Robertson et al., 2007; Smolin & Lawless, 2007).

Conversely, current efforts towards gaining full advantages of technology integration into pre-service teacher education curriculum are unsatisfactory. More than a decade ago, researchers reported that teacher education programs globally seemed to be heavily dominated by traditional approaches to teaching and learning (Katyal, 2010; Liu, 2012; Peeraer & Van Petegem, 2011; Polly, Mims, Shepherd & Inan, 2010; Norhayati & Siew, 2004; Song, 2010; Vannatta, 2007).

Therefore, the effective integration of technology seems to be problematic and challenging (Gale, 2007; Peeraer & Van Petegem, 2011; Polly et al., 2010; Smolin & Lawless, 2007). As Smolin and Lawless (2007) argue, 'technology-based reform is especially challenging because it is a multifaceted endeavour' (p. 2). This endeavour can be further described as a 'terrain of complexity, multiplicity and interconnectedness' (Gale, 2007, p. 471).

To deal with this complexity for the purpose of the current study research, main technology integration-related issues considered in the literature were identified. They include a) the pedagogical perspective that focuses on the curriculum design and its associated technology-based pedagogical practices; b) the administration perspective that discusses key roles of leadership that connect theory with practice.

THE PEDAGOGICAL PERSPECTIVE

Technology-based curriculum and technology practice cannot be separated in the process of promoting effective integration of technology in pre-service teacher education curriculum. Literature suggests that technology must be integrated more systematically, effectively and cooperatively into all facets of pre-service teacher education curriculum (Culp, Honey & Mandinach, 2005; Liu, 2012; Smolin & Lawless, 2007).

Accordingly, pre-service teacher education institutions should provide pre-service teachers with three main skills: basic computer literacy; specific knowledge in relation to teaching with technology; and practical experiences through increased exposure and practice to connect technology and the real pedagogical approaches (Liu, 2012; Teo, Lee & Chai, 2008).

Although the need for a new curriculum that integrates technology is evident, pre-service teacher education is undergoing dated standards in terms of curriculum development, which only offers pre-service teachers with older and simpler instruction methods (Peeraer & Van Petegem, 2011). Consequently, the literature supports initiatives to develop intensive curriculum-based technology training rather than basic computer skills or literacy (Altun, 2007; Smith & Kelley, 2007).

THE ADMINISTRATION PERSPECTIVE
Effective leadership contributes to enhancing the effective integration of technology into pre-service teacher education (Altun, 2007; Culp et al., 2005; Lessen & Sorensen, 2006; Robertson et al., 2007). Theoretically, its role in this process can be demonstrated in proper guidance, enhancing values and developing strategic plans for the effective integration of technology (Culp et al., 2005; Robertson et al., 2007).

Practically, effective leadership has four key actions: considering the use of technology as a priority, establishing an adequate technological infrastructure, focusing on development processes, and maintaining training and supporting opportunities for students and academic staff (Altun, 2007; Lessen & Sorensen, 2006; Smith & Kelley, 2007).

An effective leadership role and view can be translated in the shape of educational policies that promote effective integration of technology into the pre-service teacher education curriculum. Policymaking is important due to its investigation of the what, how and why of the educational institutions; how they set their priorities of pedagogical beliefs and practices (Altun, 2007; Culp et al., 2005; Gale, 2005; Robertson et al., 2007; Robertson & Al-Zahrani, 2012). Therefore, they should be revised and carefully improved, that is, to critically narrow the gap between the prospective of technology integration and the way that technology has been implemented (Culp et al., 2005; Robertson & Al-Zahrani, 2012).

SAUDI ARABIA AND GLOBAL TRENDS
Saudi Arabia is essentially driven by strong social and religious beliefs. Islamic law, known as Shariah, dominates Saudi identity, culture and the entire social life, especially education (Al-Issa, 2009, 2010; Bingimlas, 2010; Krieger, 2007; Onsman, 2011; Oyaid, 2009; Robertson & Al-Zahrani, 2012).

Although Saudi Arabia presents a highly closed and conservative context, it is a rapidly developing nation. "international competitiveness is likely to … impact significantly and possibly irrevocably on Saudi cultural traditions and religion norms" (Onsman, 2011: 1). Largely through earnings linked with the oil industry, Saudi developments within economy have supported education, and level of consumption of technology (Hartley & Al-Muhaideb, 2007; Joseph & Lunt, 2006; Krieger, 2007; Nelson, 2010; Onsman, 2011; Ramady, 2010; Sutton, 2007). Hence, many observers such Krieger (2007), Ramady (2010), and Onsman (2011) noted that the Saudi government's primary aim is to lessen the dependence on its oil industry that is predicted to come to an end in less than 100 years.

In relation to policy, the main goals of the educational policy are to eliminate illiteracy among Saudi citizens; to ensure more efficiency for education, and finally to meet the country's needs in its religious, social, cultural, and economic development (MoE, 1980; Ramady, 2010). However, there is a clear gap between policy and practice of dominant leadership duo to the strong tendency toward conservatism (Abu-Arrad & Fosaiel, 2006; Al-Asmari, 2008; Al-Miman, 2003; Al-Saleh, 2002; Robertson & Al-Zahrani, 2012). As a result, pre-service teacher education curriculum is still conditional upon the traditional vision of instruction. The integration of technology into curriculum such as online instruction is yet unknown (Al-Jarf, 2006). Further, curriculum design concentrates on quantity rather than quality and prevents pre-service teachers and instructors performing efficiently (Al-Asmari, 2008; Al-Miman, 2003; Robertson & Al-Zahrani, 2012).

RESEARCH PROBLEM, AIM, SCOPE AND KEY QUESTION
In Saudi Arabia, there is a lack of teacher preparation and training in digital technologies and that it should be improved (Abu-Arrad & Fosaiel, 2006; Al-Jarf, 2003, 2006; Al-Miman, 2003; Al-Saleh, 1999, 2002, 2003; Alsharidah, 2012; Bingimlas, 2010). In line with this, there is a paucity of studies conducted in this area.

Therefore, the aim of this study is to investigate the place of the effective integration of technology into Saudi pre-service teacher education curriculum. To achieve this, a critical examination of the current situation of technology-related policies of Saudi pre-service teacher education was conducted. The research key question is:

- What is the place of technology integration in Saudi pre-service teacher education curriculum?

METHODOLOGY
The current study implemented a qualitative approach with two main sequential stages. First, national and curriculum policies were thematically analysed. Based on this, semi-structured interviews with three key policymakers were conducted.

Qualitative research usually aims at in-depth understanding of human behaviour and the motives behind such behaviour (Mertens, 2005). It is especially effective in gaining culturally-specific information and intangible factors relevant to religion, values, norms, emotions and social practices.

DOCUMENT ANALYSIS
The current study begins with a critical analysis of the most relevant documents. Taking into consideration the fact that Saudi Arabia is a highly policy-driven context, policy is expected to play a major role in the establishment of educational and pedagogical practices. In relation to this, the following sub-questions were posed:

Table 1: Investigative perspectives, related questions

Issue	Questions
The place of technology in Saudi national policies	1. How do national policies view the role of digital technologies? 2. How does cultural-religious conservatism affect the role of digital technologies?
The place of technology in pre-service teacher education policies	3. How do pre-service teacher education policies present and maintain the effective integration of technology into the curriculum? 4. How does cultural-religious conservatism affect pre-service teacher education?

According to Merriam (1988), the concept documents in research refer to 'a wide range of written, visual, and physical materials ... Documents of all types can help the researcher uncover meaning, develop understanding, and discover insight relevant to the research problem' (pp. 109–118).
Thematic analysis is the analytic method used in the current stage. Thematic analysis 'should be seen as a foundational method for qualitative analysis' (Braun & Victoria, 2006: p. 4). It stresses recording and examining themes within a set of qualitative data that are important to the understanding of the phenomenon under investigation.

Theoretical purposive sampling was implemented to elicit a smaller number of documents that are available, eligible and more indicative of the phenomenon under investigation (Mertens, 2005). The analysed documents were classified into two main categories:

1. National policy documents that are relevant to the effective integration of technology and govern the practices of the whole community and provide the country's general framework (see Appendix 1).
2. Curriculum documents that were specifically designed for pre-service teachers' preparation and include curriculum structure, goals, objectives and guidelines (See Appendix 2).

SEMI-STRUCTURED INTERVIEWS
In the second stage, in-depth semi-structured interviews were conducted with three policymakers based on the findings obtained from the document analysis. Interviews with policymakers may uncover views, attitudes and factors affecting the integration of technology in Saudi education through a so-called governmental or quasi-governmental voice. Deemed as 'elites', it is believed that people in positions of authority can be uniquely helpful (Gillham, 2005, p. 54).

Interview participants were contacted based on their willingness to participate. Personal connections helped to facilitate this process. Probing was one of the main strategies used in the semi-structured interview questions (Gillham, 2005). In order to avoid misinterpretation, some participants were contacted to clarify the point they had made. Then, three Arabic native speakers were contacted and asked to review the translation to ensure its validity (Mertens, 2005).

Appendix 3 provides a brief overview of the interviewees' profiles. Their real names have been replaced with fictitious names due to confidentiality issues. Information in terms of their position is also kept confidential to protect their identity.

RESULTS
ANALYSIS OF NATIONAL POLICY DOCUMENTS
Thematic analysis of national policy documents unveiled two major themes: the important position of technology in Saudi national policies; and the fundamentalism of Islam and mono-cultural domination.

The important position of technology in Saudi national policies
The emphasis given to technology in Saudi national policies took a significant place when the early Saudi planners realised its importance. For instance, the Educational Policy in the Saudi Arabian Kingdom (EPSA) from the Ministry of Education (MoE), third edition, which was released in the early 1970s, acknowledged the crucial role of technology in the advancement of the country in coordination with science (MoE, 1980). For example, in the first part that concerns the most important principles, it explains the importance of the 'harmonious coordination with science and technology, being the most important means of cultural, social, economic and physical development, to raise the standard of our country and nation and to fulfil our role in world cultural progress' (p. 7). In addition, one objective of Saudi higher education is to 'perform a positive role in the field of scientific research which contributes to world progress in arts, sciences and inventions, and finding sound solutions for the requirement of developed life and technological trends' (pp. 21–22).

As another example, the Ministry of Economy and Planning (MoEP) announced the Eighth Development Plan (EDP) (2005–2009). It stresses four important demands: the improvement and expansion of the current technology infrastructure; the expansion of Arabic online content; bridging the digital gap between all segments of the nation; and the application of electronic government (pp. 499–501).

In addition, the Ministry of Communications and Information Technology (MCIT) took the initiative of formulating and implementing the National Communications and Information Technology Plan (NCITP) in 2007. This plan sets out a long-term vision for transforming Saudi Arabia into an information society, increasing productivity through providing technology services for all sectors of the Saudi community (MCIT, 2007).

With regard to the Saudi educational sector, MoE (2005) released its Ten-Year Plan 2004–2014. One of the most important factors in this plan is 'the industrial and technological changes that have resulted in the transformation of society's needs and the nature of the labour market' (p. 2). To fulfil this view, relevant goals and objectives are set out including developing 'the required infrastructure for technology to be better implemented in education' (p. 16); establishing an 'integrated system' for the application of both information and communication technologies in schools (p. 16), and enhancing 'the integration between machine and human knowledge' (p. 16).

Fundamentalism of Islam and mono-cultural domination
All Saudi national policies are substantially concerned with strengthening the Islamic ideology that should govern all facets of Saudi life including organisations, individuals and the mutual relationship between them. For example, the fundamental goal of the EPSA policy is to fulfil the duty of religion, the society's needs and the nation's overall objectives (p. 5). In addition, notions to the Islamic principles are mentioned in many other places in the EPSA such as 'religious education is the basic element' (p. 7); the 'Islamic orientation' (p. 7); the 'Islamic solidarity' (p. 8); the 'absolute faith in the fundamentals of the Islamic nation' (p. 11); the 'Islamic idea' (p. 41); the 'Islamic objectives' (p. 44); and the 'provisions of Islam' (p. 44). With regard to preserving the Arabic language, the EPSA strongly states that 'Arabic is the language of education in all its items and stages unless need dictates otherwise' (p. 9).

The influence of EPSA on other Saudi national educational policies is evident. For instance, the MoE, in its Ten-Year Plan 2004–2014, articulated clearly the vision of 'the graduation of male and female students with Islamic values and the appropriate knowledge and practice' (p. 14). In addition, this plan considers 'Islamic religious basics and society's original values' (p. 7) as the first point of its basics and determinants. Moreover, one of its methodology matters is 'Saudi society's distinguished nature and its Islamic and social privacy' (p. 9). Its ninth goal is a practical one, that is, 'to develop syllabi based on Islamic values' (p. 15). This goal's relevant objectives includes 'to develop syllabi that will ensure the development of the Muslim learner's personality to make him proud of his faith and to be loyal to his country in practice and conduct' (p. 15) and 'to develop syllabi in accordance with contemporary international trends according to the Islamic values' (p. 15).

ANALYSIS OF CURRICULUM DOCUMENTS

Saudi pre-service teachers must undertake an intensive eight-level course over a minimum of four years to be awarded a Bachelor in Education. This certificate is in a specific discipline of teaching that includes Islamic studies, Arabic language, Social Studies, English Language, Natural Sciences such as Biology, Chemistry, and Physics, Maths, Computer Science, Special Education, and Physical Education.

For most of the teaching disciplines, pre-service teachers study four specific units/levels making seven accredited units in the educational technology preparation. Each unit/level has its own set of objectives in terms of theory and practice. According to the Faculty of Education at King Abdulaziz University, the main goals of the Department of Educational Technology (DET) (2014a, 2014b) mainly focus on providing pre-service teachers with compulsory courses in the field of educational technology as well as providing technical assistance and support to faculty members.

After reviewing the policies goals, guidelines as well as curriculum structure in Saudi pre-service teacher education, the following themes emerged.

Islamic principle-guided goals, policies and curriculum structure

Saudi pre-service teacher education must reflect Islamic values and morality. As stated in the EPSA, the first goal is that teacher preparation 'shall be in line with the nation's basic objective in rearing up a Muslim generation which understands the Islamic creed and law' (p. 30). The aim is also to preserve cultural aspects such as the Arabic language and the total reliance on it as the solo language of education. This is 'to enable graduates to teach with a high Islamic spirit and correct Arabic language' (p. 30). A case in point is that the process of recruiting administrative and teaching staff in pre-service teacher education is mainly dependent on 'Islamic morality' in addition to 'scientific standards and educational competence' (p. 30).

Technology integration-free policies, curriculum structure, goals and objectives

It can be argued that, firstly, the goals of Saudi pre-service teacher education as well as the overall goals of the curriculum and the units that pre-service teachers must take in terms of educational technology preparation do not contain any explicit reference to 'technology integration' (DET, 2014a, 2014b). Rather, the educational technology preparation goals and objectives only describe the scope of educational technology learning and training in terms of the pre-service teachers' proficiency and capability to use technology in general. The focus is on understanding theories, concepts and knowledge with less emphasis on the practical side.

In addition, the overall goals and objectives of the educational technology preparation show a clear absence of any performance standards in the related teaching and the required technology skills that pre-service teachers should be able to demonstrate. The documents briefly state only what pre-service teachers should be able to accomplish after completing the program, rather than what they should be able to do in their future classrooms.

POLICYMAKERS' INTERVIEWS

Based on the key findings obtained in the analysis of both national and curriculum documents, this sub-section investigates the policymakers' perspective as technology practitioners including factors affecting the integration of technology into the pre-service teacher education curriculum and their pedagogical perspective and administration perspective. Table 2 presents key issues, questions and focus for the major themes.

Table 2: Key issues, questions and focus of policymakers' interviews

Major Themes	Key Issues	Interview Questions
Policymakers' technological perspective	• The impact of global technological developments on effective technology integration	➢ What is the impact of the global pressure of technological developments on the integration of technology into pre-service teacher education?
	• The impact of cultural-religious conservatism on effective technology integration	➢ What is the impact of cultural-religious conservatism on the integration of technology into pre-service teacher education?
Policymakers' pedagogical perspective	• The policymakers' conceptualisation of a globalised curriculum	➢ How do the policymakers conceptualise the globalised curriculum?
	• Their views of the quality versus quantity curriculum	➢ How do the policymakers view the quality v. quantity curriculum?
Policymakers'	• Leadership vision of effective	➢ What is the current leadership view of effective

administration perspective	integration of technology	integration of technology into pre-service teacher education?
	• Current leadership practices to integrate technology effectively	➢ What are the leadership current practices to integrate technology effectively into pre-service teacher education?

Policymakers' technological perspective

First, the global pressure of technology refers to the pressure generated by the massive, rapid and global developments of technology on any society, which evokes a technological transformation. Ali confirmed that:

> Technology has become a must and cannot be avoided or ignored whether we like it or not! We must get out of being local to global. We should get out of the box and take advantage of the global developments in technology.

Hamad also elaborated that:

> Most global trends are now about technology.

Second, cultural-religious conservatism appears in the policymakers' responses as an important issue that affects their perceptions with regard to technology. Ali clearly stated that:

> We are afraid of the inappropriate or harmful use of technology. Therefore, we must impose new kinds of censorship in order to effectively use it.

Policymakers' pedagogical perspective

First, the globalised versus traditional curriculum. Both the global pressure of technology and cultural-religious conservatism influence the policymakers' views with regard to the necessary curriculum developments. For instance, Ali articulated that:

> We now have more choices in education in the presence of modern technology, which becomes a global language. Therefore, we must abandon our old teaching methodologies and adopt new ideas including the integration of digital technologies.

However, this transformation seems to be more concerned with the curriculum format not with its content:

> We completely differentiate between importing curriculum and importing only curriculum styles and approaches. Specifically, we emphasise the originality of the curriculum, but we wish to benefit to the maximum possible extent from the scientific and technological aspects. (Saeed)

Second, quantity versus quality curriculum. Saudi teacher preparation has focused for decades on the preparation of an adequate number of teachers who can cover the shortfall of teachers in general education. Hamad confirmed that:

> The desire of the Ministry of Education is that graduated teachers should be multi-disciplinary so that they can easily teach any subject.

Policymakers' administration perspective

The first issue is leadership theory of the effective integration of technology. The interviewed policymakers considered the integration of technology as a priority. According to Ali:

> The integration of technology is one of the very, very, very important issues that we have. It has become a modern necessity.

Therefore:

> The Faculty of Education has established two micro-teaching centres and improved the Educational Resources Centre. There are digital laboratories for Mathematics and Arts. We also have audio laboratories for the English language and Quran studies. Also, there are more than 20 classrooms equipped with data projectors and are ready for use. (Saeed)

DISCUSSION AND CONCLUSIONS

The current study reveals two major findings. The first is the importance of technology that reflects its global pressure and rapid development. This is acceptable in light of the current global competition to make the most of technology and its rapid developments in building knowledge-based societies as well as strong and competitive digital economies (Bongo, 2005; Fong, 2009; Nasab & Aghaei, 2009; Poorfaraj et al., 2011; Norhayati & Siew, 2004).

The second finding is the domination of cultural-religious conservatism. Conservative and traditional contexts such as Saudi Arabia may bear witness to a legitimate resistance to adopt some new global trends, such as the integration of technology on a wide scale (Al-Asmari, 2008; Krieger, 2007; Onsman, 2011; Ramady, 2010; Robertson & Al-Zahrani, 2012). As a case in point, Saudi education has less emphasis on issues relating to globalisation (Al-Issa, 2009, 2010).

Saudi conservatism can be attributed to the so-called 'cultural sheltering' (Al-Asmari, 2008, p. 250). Usually, authorities in conservative contexts such as Saudi Arabia take 'proactive measures' to protect the local culture by reducing interaction with foreign cultures that may reduce the value of the native culture (Al-Asmari, 2008, p. 250). Further, Saudi Arabian people are usually committed to their social and religious values and tend to reject new ideologies that may cause confusion (Krieger, 2007).

The notion of conservatism can be also found in other relatively similar contexts. For example, Abuhmaid (2010) revealed that the national Jordanian project, named the Education Reform for the Knowledge Economy, was proceeding very slowly as it was in conflict with the dominant culture of the local system. In Turkey, which is another similar context, E. Çakirogoelu and J. Çakirogoelu (2003) argue that:

> We believe that there are many things that we can learn from the international literature on the field of education. However, we also believe that there needs to be a filter of critical perspectives for any knowledge that is being used in other cultures. (p. 262)

However, it can be argued that the Saudi outlook with regard western-based cultures is shifting from sheltering toward selectivity. Onsman (2011) argues that Saudi cultural-religious norms are subject to a significant impact that could be permanent due to the pressure of 'international competitiveness' (p. 1).

As a result of conservatism, traditionalism is widely prevailing as the obvious model of education. This result strongly supports the assumption that teacher preparation in Saudi Arabia is still conditional upon the old vision of instruction through applying traditional methodologies of teaching and learning (Al-Asmari, 2008; Al-Issa, 2009, 2010; Robertson & Al-Zahrani, 2012). The overall structure of the Saudi pre-service teacher education curriculum, guidelines, goals and objectives severely lack the vision to integrate technology effectively. Pre-service teachers' educational technology preparation is provided through traditional technology-related courses that have no connection with their current or future pedagogical approaches.

While the curriculum tends to be more standardised and focuses on quantity rather than quality, little opportunity for the effective integration of technology seems to be offered. This conflicts with the findings of the literature in this regard. The literature stressed the effectiveness, efficiency, productivity and competency of the curriculum design. Technology should be an integral part of all facets of the pre-service teachers' curriculum to meet their needs, preferences and learning styles as well as the challenges of digital societies (Altun, 2007; Smith & Kelley, 2007; Smolin & Lawless, 2007).

As the effective integration of technology was found to be a high priority in the policymakers' mission, many technology-related developments were introduced. This can be a promising result as a great deal of literature emphasises that this positive vision or theory should be the first stage to ensure the effective integration of technology into pre-service teacher education (Culp et al., 2005; Lessen & Sorensen, 2006; Robertson et al., 2007).

All in all, the effective integration of technology into Saudi pre-service education curriculum seems to have less attention, at least in the present time. Based on the current study's findings in association with previous research, context-appropriate recommendations are proposed. These involve two main domains: enforcing innovative technology-based pedagogical models and developing effective leadership.

The efficiency of the curriculum can be increased reinforcing innovative educational models to lessen the impact of traditionalism and the focus on quality rather than quantity. Further, updating courses and content relevant to educational technology preparation is critical to enhance the pre-service teachers' effectiveness and eligibility for practice. Moreover, increasing the number of online courses and embedded technology-based activities may enhance communication, collaboration and flexibility of learning.

As leadership is critically important, leadership is required to clarify issues surrounding the effective integration of technology at both levels of theory and practice. It must provide answers to the following questions: what technology should be used; why it should be used; how it should be used; and when it should be used?

Leadership is also required to create effective cooperation and partnerships with advanced international educational organisations. This may increase the quality of Saudi teacher preparation by observing successful expertise by the means of knowledge sharing and exchange of experience. Cooperation with the private sectors is also important to support the provision of expensive technologies as well as training and support.

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APPENDICES

Appendix 1

Selected national policy documents

No.	Policy/Document	Description/Significance/Content	Source
1	The Educational Policy in the Saudi Arabian Kingdom	The highest Saudi educational policy that controls all facets of Saudi education and related systems	MoE (1980)
2	The Ten-Year Plan of The Ministry of Education (MoE)	The National strategic plan for the MoE for the period (2004-2014)	MoE (2005)
3	Education Development National Report of the Kingdom of Saudi Arabia (2000-2004)	National report regarding education development in Saudi Arabia produced by the MoE in cooperation with the Ministry of Higher Education (MoHE) and Technical and Vocational Training Corporation (TVTC)	MoE (2004)
4	Report on Identity and Development	National report on Saudi education development in terms of knowledge economy	MoE (2008)
5	King Abdullah bin Abdulaziz Public Education Development Project	The project aims at involving the community to formulate a future vision for Saudi education through dialogue and partnerships between state institutions	Tatweer (2010)
6	The National Communications and Information Technology Plan: The Vision Towards The Information Society from the Ministry of Communications and Information Technology (MCIT)	A comprehensive ICT plan that consists of a long-term vision for ICT in SA for the next 20 years plus a five-year plan that projects the long-term vision for the first five years of the plan	MCIT (2006a)
7	Information And Communications Technology (ICT) Policy Statement from the MCIT	This document is to state the policies that have been adopted by MCIT in the past few years, as well as those MCIT plans to pursue over the next few years in the development of the ICT sector in Saudi Arabia	MCIT (2006b)
8	The Universal Access And Universal Service Policy from the MCIT	This policy implies that 100% of a population can obtain, at a minimum, public access to a defined ICT service at a defined quality, through reasonably available and affordable public or community facilities	MCIT (2006c)
9	The e-Government Program from the MCIT	The program (*Yesser*) translates the Saudi Government's keen interest in implementing the e-government concept as a part of many initiatives aimed at achieving sustained growth and development	Yesser (2009)
10	The Saudi Arabian Home Computing Initiative (SAHCI) from the Communication and Information Technology Commission (CITC)	This policy has the core mission of enabling all Saudi families to obtain a personal computer through easy and affordable instalment plan	CITC (2010)
11	The Long Term Strategy of The Saudi Economy 2025 from the Ministry of Economy and Planning (MoEP)	A strategy designed to provide a framework for four successive five-year plans until 2024 and aimed at achieving a comprehensive socioeconomic vision by the end of the period	MoEP (2005a)
12	The Eighth Development Plan (2005-2009) from the MoEP	This development Plan has been prepared in the context of a long-term vision and economic and developmental strategy geared to achieving sustainable development	MoEP (2005b)
13	Millennium Development Goals from the MoEP	National policy that aims at formulating a common development vision that would respond to existing needs and rise to new challenges; all within a framework of partnership at national and international levels	MoEP (2010)

Appendix 2

Selected curriculum documents

No.	Policy/Document	Structure/Description	Source
1	Main goals of Saudi teacher preparation	The general framework for teacher preparation in Saudi Arabia	MoE (1980)
2	Main goals of the DET, Faculty of Education, King Abdulaziz University	Teachers' technological preparation according to the DET	DET (2014a)
3	The Educational Technology Preparation Module	This module consist of 4 units that are compulsory for graduation: - Introduction to Educational Technology - Production of Instructional Means - Using Instructional Means - Design and Production of Educational Computer Programs	DET (2014b)

Appendix 3

Overview of the policymakers' profiles

Policymaker	Age	Education	Relevance/Position	Site	Duration	Time
Ali	50s	PhD in Education Curriculum and Teaching Methodologies	Full professor, Key policymaker in Saudi pre-service teacher education	Ali's office	14.48 min	11:30 AM
Saeed	40s	PhD in Education Islamic Studies	PhD, Key policymaker in Saudi pre-service teacher education	Saeed's office	25.48 min	1:30 PM
Hamad	50s	PhD in Education Curriculum and Teaching Methodologies	PhD, Key policymaker in Saudi pre-service teacher education	Hamad's office	39.24 min	2:00 PM

Appendix 4

Educational Technology units/levels

Level	Unit title	Unit code	Accredited units	Type	Prerequisite code
1	Introduction to Educational Technology	TTEC 100	One Unit	Theoretical	N/A
2	Production of Instructional Means	TTEC 200	Two Units	Theoretical & Practical	TTEC 100
3	Using Instructional Means	TTEC 201	Two Units	Theoretical & Practical	TTEC 100
4	Design and Production of Educational Computer Programs	TTEC 300	Two Units	Theoretical & Practical	TTEC 100