

# **Teachers' Professional Development on ICT Use: A Saudi Sustainable**

## **Development Model**

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Abstract: Teachers are the key knowledge producers and the development driving force of any nation. Studies have shown that, the wealth of any nation largely rests on empowering its knowledge producers and knowledge generators. Training teachers on necessary skills and knowledge for personal and career development is must for attaining sustainable societal development. One of the Saudi's Ninth Development Plan is to turn the Saudi society into information society through various mechanisms notably training and developing teachers on effective use of ICT. This paper discusses the Saudi development framework for training its treachers on skills and knowledge in terms of ICT having been in information communication age which helps in knowledge dissemination, knowledge transfer, knowledge sharing, and knowledge production. The impediments in the way of achieving this framework are discussed while suggestions are proposed for the improvement of the model for the Saudi Government, stakeholders, teachers as well as Saudi society at large.

Key words: professional development, ICT use, sustainable development, Saudi model

## **1. Introduction**

Teachers' continuous professional development is the key performance index for any nation's growth. Experiences around the world have identified that teachers' effective professional development would help build a new understanding of teaching and learning in the technology age (Lee, 2001, p. 2). The Saudi government has realized that in order to improve its economy it should first improve the quality of its peoples. In order to actualize this reality, the Kingdom designs Tripartite sophisticated sustainable development programs namely; a National Project "*Watani*", *Tatweer* Public Education Program, and *Jehazi* Project to this end. These three projects of Kingdom of Saudi Arabia on human resources development have marginally recorded a successful implementation (Al-Sulaimani, 2010, p. 14) with slight improvements. The *Watani* Net Project is aimed at training and building the capacity of teaching staff on proper handling of IT to facilitate teaching and learning process (Arab News, 2014). The *Tatweer* Public Education Development Program is a collaborative effort between the

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Kingdom and the Association for Supervision and Curriculum Development "ASCD" a reputable organization specializing in developing and delivering high quality professional development service. One of the markedly objectives of this program is structured towards developing Saudi teachers' competence and their mastery of skills and knowledge in ICT (Tatweer, 2012). Interestingly, the *Jehazi* Project is aimed at training Saudi teachers to apply technological apparatus in improving their teaching and learning process and encouraging every teacher and student to possess his/her own ICT gadgets (Ministry of Education, 2012b; Altawil, 2012, p. 23).

The blue print on training and developing teachers' skills and knowledge on ICT use is not only a concern of Saudi authorities; it is a general plan worldwide. Al-Sulaimani (2010, p. 12) and Tatto (2006, p. 2) indicated that the education authorities in developed countries have noted the significance of such training, development, and ICT.

The technology progressiveness and human aggressive advancements in knowledge and internet accessibility in particular are inevitable for teachers to use technology in their pedagogy. In Saudi specifically, there is an increasing demand of ICT every day the demand that arises among the teachers themselves (Ageel, 2011, p. 4).

Empowering teachers' knowledge and pedagogy in terms of incessant training is perceived as a mechanism for driving change in educational systems (Day & Sachs, 2004, p. 7), and frequently deepening teachers' knowledge and skills is an integral part of the teaching profession (Mansour, Alshamrani, Aldahmash, & Alqudah, 2011, p. 1). The optimal aim of Saudi Government in its Ninth Development Project is to promote pedagogical program that will incorporate ICT.

Saudi teachers continuously need and want intervention. For example, the Excellence Centre of Science and Mathematics Education (ECSME) at the King Saud University consider science teachers' professional development a key element for the transformative program in the country (Mansour et al., 2011, pp. 2–3). Studies have shown that, the majority of Saudi teachers are in need of pre-service and in-service pedagogical, academic training and skills (Mansour et al., 2011, p. 2). This paper discusses the Saudi development framework for training its treachers on skills and knowledge in terms of ICT and the considerably leap effort made by Saudi Arabia Government in its Ninth Development Plan to continuously train Saudi teaching staff in using computer for teaching and learning process (Ageel, 2011, p. 6), the obstructions on the way of achieving this framework were discussed, and suggestions were proposed for improving the model for Saudi governments, NGOs, stakeholders, teachers as well as Saudi societ at large.

#### 1.1 Historical Background of Raison D'être the Infusion of ICT into Saudi Educational System

Saudi Arabia does not blindly leap into the projects of training its teachers and developing their potentials in ICT. The trend of developing the Kingdom's human resources and having a focus on ICT is scientifically studied from the experience of Arab world and the developed nation perspective. The reviewed studies in this regard found that ICT proper use has a high correlation with the social well-being of a community (Al-Sulaimani, 2010, p. 56). In the Arab world, technology has been proven to be an end in teaching, and means in catching up with the global sustainable development. With regard to the developed worlds, the World Bank statistics in 2009 asserted that a 10 percentage point increase in the broadband use contributes to an increase of 1.21 percentage points in annual average GDP growth rates per capita of those countries (Al-Daweesh, 2011, p. 4).

Interestingly, Fleming, Motamedi and May (2007) who surveyed 79 pre-service teachers on training experience and computer technology skills found that the more comprehensively pre-service teachers engaged themselves in using computer and the more they use ICT in and out of their teaching, the more likely they will be

competent in the computer technology skills. The use of ICT is also found to be an effective tool for improving productivity and an economic growth (Al-Daweesh, 2011, p. 9) and improving sustainable economic gains.

Historically, ICT was first introduced to Saudi education system in 80s. The successful introduction of ICT at that time encouraged the Ministry of Education to include it as part of curriculum in 1991 (Oyaid, 2009, p. 23). Study indicated that technology is advantageous to Saudi Arabia in many ways (BouJaoude, 2003, p. 3) because it helps make the abstract knowledge real, develop public awareness, improves standard of living, and a source of income for some cohorts in the society (UNESCO, 2003, p. 2).

Since 90s the Saudi Ministry of Education has taken various steps to incorporate information technology, computer science, and computer application to aid the teachers, students at school level as well as at the societal level (Oyaid, 2009, p. 30) to eradicate illiteracy from the Saudi society so as to have a sustainable envisioned growth (General Directorate for Planning, 2005; Ministry of Education, 2008; Ministry of Economy and Planning, 2006). ICT was fully incorporated into the Saudi system at all levels within 2000 through 2004 by the committee designated for the said programmes under the tutelage of the Ministries to progressively develop teachers as knowledge producers and economic growers (Ministry of Education, 2006b; Al-Omran, 2007). In the abovementioned years computer skills are made mandatory for Saudi teachers and a requirement for their qualification (Al-Wattan Newspaper, 2001).

#### 2. Literature Review on CPD, ICT, and their Advantages

The strong structure of education stands on the support offered to the teachers. It is necessary to satisfy teachers' needs and develop their skills to cope with new technology challenges and raise the educational standard. Successful utilization of technologies depends on its users (Chittleborough, Jobling, Hubber, & Calnin, 2008, p. 4; Lee, 2002, p. 2), providing training for them to keep up with information, knowledge and skills is necessary for the ongoing innovations (Robertson, 2003, p. 5; Qari, 1999, p. 1) and effectively contributes to boosting the users' self-efficacy, motivation and computing habits (Robertson & Al-Zahrani, 2012, p. 1).

Teachers' professional development is the most important factor before their ICT use due to the fact that, they are the key players in learning and teaching. Blackmore, Hardcastle, Bamblett, and Owens (2003), opined that teacher's continuous training and development should precede the integration of ICT into classrooms in order to ensure the effective use of it. Teacher's Development can be gauged by his/her level of education and the amount of training he/she receives (Beeby, 1966, p. 12), the amount of training received can be measured by the knowledge and skills teachers were equipped with and their positive impact on their pupils (Al-Sulaimani, 2010, p. 157) and that such knowledge and skills could be successfully imparted by means of initial training received (Al-Rashed, 2002, p. 8). The developed nations such as U.S.A had also highlighted the significance of teachers' professional training (Al-Sulaimani, 2010, p. 30) and that attitudes toward computer use can be improved by training its users (Woodrow, 1992, p. 2). Ming, Hall, Azman, and Joyes (2010), who found that lack of skills and training in ICT makes many of the university teachers to be reluctant in using it suggested that, continuously training the teachers will enable them to successfully use ICT in their teaching. Pelgrum (1993) reported that the amount of information received by teachers in service training courses is strongly related to their attitude about the educational impact of computers.

Professional development helps update teacher's knowledge and skills and makes them involved in sharing knowledge with one another (Al-harbi, 2011, p. 61). Pre-service and in-service teachers who were trained on ICT

used it significantly more frequently than those who were not trained on it (Al-Alwani & Soomro, 2009, p. 9).

Studies found that, successful integration of ICT into teaching and learning processes requires developing teachers' knowledge, confidence and skills on ICT use as well as providing them the hardware and software (Reid 2002; Ortega, 2000; Blackmore, Hardcastle, Bamblett, & Owens, 2003). Hasanain (2005) asserted that staff improvement program is almost necessary when an organization is changing its objectives or introducing new technology into its system. The quality of school's ICT equipment becomes irrelevant if teachers do not have the required competencies and not well trained to handle and have appropriate skills with regard to the equipment (Hasselbring, 2000; Ortega, 2000).

ICT is becoming as significant as basic needs for all people. Teachers' capacity can be built on ICT use if they are given a thorough training. Khan (2001) found in his study that the lecturers and trainers' competency could be enhanced on ICT when they made use of various ICT-based hardware and software, which will give them the capability to deliver a more enhanced graphics-oriented presentation of lectures (Ageel & John, 2012, p. 2), facilitate computer based technologies for knowledge sharing (Lindvall & Rus, 2003, p. 4), change the ways of teaching (Almalki & Williams, 2012, p. 3) deliver high quality education and prepare students for the information era (AbdulKafi, 2006, p. 5), and help reduce teachers' efforts to deliver knowledge, achieve better visualization and motivate the learners (Almalki & Williams, 2012, p. 1).

The integration of ICT into education will not only provide assistance and guidance for teachers but also give them the opportunity to make use of various types of technologies in order to enhance their instruction (Ageel & John, 2012, p. 2), allows both teachers and learners to make use of different types of communication devices beyond the classroom instructions (Yusuf & Onasanya, 2004, p. 6), and additionally helps teachers to prepare lessons, improve their skills and knowledge for administrative work and assess the learners' performance (Almaghlouth, 2008, p. 6).

## 3. Teachers' Professional Training in the Kingdom of Saudi Arabia

In Saudi Arabia a plan to train teachers and empower them professionally commenced in 70s. This plan is ongoing and it encompasses both disqualified and qualified teachers as MacDonald (2008) stressed the importance of designing an ongoing programme and community of practice for teacher's professional development. Al-Rashed (2012) stated that, teachers in the Kingdom of Saudi Arabia are given every opportunity to pursue academic training that qualifies them for higher post in their field of specialty. Al-Sulaimani (2010) suggested that Saudi teachers are provided continuing training and development to maintain and ensure their competencies in pedagogy. He further explained that, the objectives of Saudi education policy in training the teachers are to provide standard education in meeting the social needs of the country and of the people so as to compete in the global labor market.

Recently, his Royal Highness King Abdullah's *Tatweer* project has collaborated with Centre for British Teachers "CfBT" to devise and continuously implement a teacher training programme in Saudi Arabia (www.cfbt.com). Professional development programs initiated in Saudi Arabia (Ministry of Education, 2007) are to specifically train teachers in troop (Ministry of Education, 2003) as a fact that teacher-related development and training is the most significant predictor for success technology adoption (Almalki & Williams, 2012) and a critical factor in the successful integration of ICT in Saudi Arabia.

## 4. The Ninth Saudi Development Framework on CPD and ICT

The Ninth Saudi Development Plan is a continuation of its tripartite development programs adopted by the Kingdom (Ministry of Economy and Planning, 2010, p. 55). In this development approach and in a way of maintaining world-class education for all the citizens Saudi government determines to train the teachers on ICT skills in order to achieve sustainable growth in the competitive global economy (Al-Sulaimani, 2010). The development plan is centered on five major themes which form the integrated Kingdom's framework on human and country development (Ministry of Economy and Planning, 2010, p. 57). The Saudi ministries, administrations, government agencies and non government agencies are concerned that accelerating developments of knowledge and technology rest on spreading the culture of training in order to build a highly skilled individuals in the Saudi organizations (Okaz Newspaper, 2013, p. 16).

The major focus of Saudi Ninth Plan is a staunch belief that highly skilled people who have received thorough sophisticated training with modern technologies are the main engine to propel value and wealth creation of the country to push the Kingdom forward to achieve a value laden modern society. The main aims of the Ninth Development Plan with regard to human development are:

• To provide training programmes to the Saudis to be gainfully employed in any organization or be successfully self-employed

- To increase the number of educated, trained and skilled Saudi ICT professionals
- To expand the scope of advanced training and development of technology

On the Kingdom's realization that the country's development rests on human development billions of Riyals are expended or expected to be spent to this end (Al-Sulaimani, 2010, p. 201; MOE, 2000a; MOE, 2000b). Table 1 depicts the Saudi government spending on human development to incorporate technologies into education in order to hasten the desired development.

Human Development Sector	Expenses (SR Billion)	<b>Rate of Increase</b>
Training (Technical and Vocational)	23138	41.6
Science, Technology and Innovation	6524.7	87.6

 Table 1
 Ninth Development Plan Expenditure for Human Development Sectors Only

Source: MOEP.

Table 1 shows the Saudi government's projection on training and technology in its Ninth Development Plan. The estimated amount of monies herein does not include other aspects of expenses such as social, health, and oil to mention but a few. The same Table also shows that Saudi Government has invested heavily on CPD and ICT to boost and actualize the country's growth.

Additionally, according to Table 1, it can be said that the Kingdom's support for training, technology and innovation is very high as a plan to provide work-ready male and female Saudis trained in computer use who would be later employed in the near future in meeting this plan to push and pull the country to the future desired glory.

The Saudi Government framework in its Ninth Development Plan is set up by the Kingdom's National Commission for Academic Accreditation and Assessment (NCAAA). The NCAAA sets up eleven criteria of which standard four of them includes teachers' professional training program that which focus on five broad areas as learning and developmental domains for the teachers. The five domains are the core of Saudi's Ninth

Development Plan for long term sustainable program" (Al-Hattami, Muammar & Elmahdi, 2013, p. 3) in blending ICT with education (Ministry of Education, 2007).



Figure 1 The Ninth Development Plan Framework for CPD and ICT

K = Knowledge, C = Cognitive skills, IR = Interpersonal skills and responsibility, ITN = Information, community technology and numerical skills, and P = Psychometric skills.

Figure 1 is a Venn diagram of the Ninth Saudi Sustainable Plan for CPD and ICT which aims at blending knowledge with creative problem solving and teachers' ability to be responsible for their own learning, continuing personal and professional development and their ability to communicate effectively using the available technology device with the use of both mental and muscular strength in achieving the goals of the framework among and within the three Kingdom's Development Programs.

### 5. Impediments for Achieving the Ninth National Framework for CPD and ICT

Saudi has faced considerably unlimited challenges in its Ninth National Development Plan for CPD and ICT. Some of the challenges faced by the Kingdom in the way of achieving this development are highlighted as large amount of monies needed to fully implement the framework into its full potential, cultural environmental shock, little teacher's preparation and training for technology use, teacher's self confidence to use ICT after training, competent professionals that will ensure teachers' CPD (Al-Daweesh, 2011; Bingimlas, 2009, p. 2; Robertson & Al-Zahrani, 2012, p. 5; Ministry of Communications and Information Technology, 2011, p. 40) and teachers' inadequacy to meet the market demand and labor force participation across the economy (Al-Daweesh, 2011). Although, the Kingdom has taken a huge step in overcoming these challenges, however, there are loopholes that need to be addressed critically by the government, agencies and all stakeholders to jointly mitigate the impediments which hinder the actualization of the framework to its full possibilities. Here are some suggested steps that which if taken will assist in mitigating the impediments.

### 6. Suggestions and Recommendations

In light of the abovementioned hindrances, this paper proposes in order to reduce the impediments and find a way forward to achieve the framework in order to fulfill teachers' needs in terms of their access to good educational resources and appropriate training. The paper suggests that Saudi Government should provide adequate and confident trainers to train the teachers. Teachers should be constantly encouraged to undertake professional development and continuely pursue mental and physical skills required of them in the age of globalization. Teachers' professional development programme should necessarily include technology, flexible and rigorous curriculum that will ensure problem solving and be updated. There should be a high security in place to ensure that Saudi citizens are protected from a large number of websites deemed offensive to the Saudi society. The adopted tools such as ICT should be adapted and used within an Islamic framework. The Kingdom's educational policies are expected to include ICT to prepare school leavers to seek jobs in the labor force and in the global economy. Teachers should be motivated to willingly and readily accept the training and ICT that which the framework intends to enhance them for and the teachers should be taught that the use of technology would not hamper the other high level goals they wanted to accomplish. At the top of everything, the government's support and financing is of utmost important in this sense. The government should also create a suitable ICT infrastructure environment and professional training in terms of workshop, special courses to equip Saudi citizens particularly the teachers with knowledge and learning abilities needed in this 21st century. There should also be an exchange programme with foreign higher learning institutions that will boost Saudi teachers' competencies and capabilities.

## 7. Conclusion

This paper showed that, teachers' continuous training and the use of modern technology devices do not only help boost country's manpower but also invigorate the country's economy to compete well in this challenging world of the globalization. The authors of this paper suggest that since continuing professional programme blended with modern technology can promise producing quality education as well as social well-being, it is now left to the top authorities and the people concerned to use concerted efforts to accomplish these intended outcomes.

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