The Digital Divide and Its Influence on Public Education Diffusion

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ABSTRACT

It is evident that information and communication technologies (ICTs) have improved performance and efficiency for different types of organizations. One of the important applications of ICT in public and private businesses is related to education, where electronic learning (e-learning) is a domain that became a paradigm more than a specific application. To utilize the full benefits of e-learning in public education and to exploit the diverse options of e-learning and specifically the synchronization of learning, digital divide is becoming an important obstacle that prevents teachers, students, and society members from benefiting from this phenomenon. Governments are striving to bridge the digital divide so that equal opportunities for education are guaranteed for their citizens in urban and rural areas. It is vital to explore the influence of digital divide on rural areas and how it affects the learning process. This study will explore the digital divide phenomenon, its relationship to e-learning concepts, how governments bridge this divide through e-government options, and finally, conduct an empirical test that explores the perceptions of students living in rural areas around the digital divide and its relationship to e-learning and education.

Keywords: Digital Divide, E-Government, E-Learning, Jordan, Perceptions, Public Education, Rural Areas, Technology Diffusion

1. INTRODUCTION

In the last two decades, the Internet contributed to the human wellbeing through the improvement in health, business and society. Information and communication Technologies (ICTs) and the Internet contributed also to spreading education to many rural areas specially through e-government and e-learning initiatives. Many universities are offering now online degrees and even businesses are utilizing such capabilities to facilitate training and collaboration. It is vital to consider the Internet as a strategic weapon, where human and business can survive through the exploitation of such tool.

E-learning is an important phenomenon, where many universities and schools are using the Internet to offer their students the chance to learn when they are home or in remote areas. E-learning utilized the capabilities of the Internet

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to improve the performance and efficiency of the educational process. The major obstacle against such phenomenon is the digital divide.

The digital divide is not only related to those who have or have not, it has many layers and many types. It can relate to people with accessibility and those who don’t, or it can relate to people who own the knowledge and skill to use computers and the Internet. In all types and levels of digital divide it is important to align the efforts related to bridging the digital divide to the desired levels agreed upon by the government of a country or users (Baker & Panagopoulos, 2004). The aim of such alignment is to look into people’s need of the level of technology suitable to each area or segment.

E-learning efforts are divided between private and public sector, and also between universities and governments. E-government initiatives are important in bridging the digital divide. It is crucial to the success of e-government initiatives to bridge the digital divide, where citizens have equal access and opportunity to gain their education. E-learning can help governments bridge such gap and reach citizens in rural areas.

In this study, an empirical test will try to probe students’ perceptions regarding the influence of digital divide and how can governments in developing countries overcome such challenge. Also, a comparison between the perceptions of students living in rural areas and the perceptions of students living in cities will be conducted to know the difference regarding issues explored in this study. Finally, conclusions and future work are stated at the end of this study.

2. LITERATURE REVIEW

To reach the desired level of efficiency in e-learning systems in a country, digital divide must be bridged to ensure the best communication and collaboration levels between users. Digital divide types must first be understood to better bridge the gap and improve the e-learning system. Also, the relationship between digital divide and e-learning should be explored. Based on that, the following two sections will investigate the two areas by exploring the literature related.

2.1. The Digital Divide

In a very simple language, e-government is defined as providing public services using the Internet. One of the major services provided by governments all over the world is education. Abu-Shanab (2013) categorized e-government activities into four major dimensions: providing service, improving government performance, e-democracy and participation activities, and social development and bridging the digital divide. Based on that, research in the digital divide is explored from three major perspectives: social domain, e-government domain, and political domain. ICT is a major factor that cuts across the three areas and merges issues within each domain.

Many types of digital divide emerged in the literature, the following are the major typologies reported: people with disabilities digital divide (Seckin, 2010), gender digital divide (Minguez, 2006; Yao & Okoli, 2007; Subramanian, 2007; Tobola, 2010), race digital divide (Enoch & Soker, 2006), age digital divide (Redsell & Nycyk, 2010; Enoch & Soker, 2006; Geana & Greiner, 2011), education digital divide (Eynon, 2009), and income digital divide (Seckin, 2010). Each type of the previously mentioned digital divides requires a different scheme to overcome and each segment needs different and suitable system requirements.

Helbig, Gil-García and Ferro (2009) introduced three levels through which digital divide can be explored and using three approaches; in the first level, digital divide can be explored using a technology access approach, which differentiates between people who have access to technology and others who don’t have. The second level, the multi-dimensional approach, in which several factors are considered when exploring the digital divide like: the existence of different economic opportunities, the differences between developed and developing
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