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E-learning in Saudi Arabia: A Review of the Literature

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This whole work was carried out by the author AYNA.

Review Article

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ABSTRACT

Distance education and the use of digital information technologies are growing rapidly throughout the world, in cities as well as in remote areas. Distance education and distance learning refer to a variety of different learning methods. However, communication can be conducted online via e-mail or on the designated course website Saudi Arabia has enthusiastically embraced distance learning, especially in recent years. This paper will discuss the new era that the government of Saudi Arabia is ushering in with its implementation of the distance learning system. Despite this progress, there have been many criticisms, fears, doubts, unanswered questions, and expressions of pessimism about the value and ultimate success of the proposed distance learning system. The study was conducted to examine the literature regarding E-learning in kingdom of Saudi Arabia that influenced the implementation and integration of distance learning for higher education systems. The author attempts to use this literature review to demonstrate the cultural, social and economic benefits of E-learning because it allows for the development of knowledge.

Keywords: Distance learning education; skills; integration; E-learning.

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1. INTRODUCTION

Distance education and E-learning have become popular educational delivery methods for a number of reasons. Distance education uses asynchronous technology where interaction between instructor and learner, and learner to learner is delayed over time that overcomes rigid time constraints. The accessibility of this delivery system provides courses without the requirement of having to physically attend a classroom and allows students to establish their own schedules and work at their own pace. According to Al-Fahad FN, "E-learning is beneficial to education, corporations and all types of learners. It is affordable, saves time, and produces measurable results" [1]. Developing the content for E-learning may be more cost effective than traditional lesson plans delivered by a teacher in the classroom many times to different student groups. It is possible to provide E-learning to multiple students in diverse geographical location without travel expenses and maintaining a physical facility which are additional reasons to consider E-learning as a delivery method. Among the major advantages of E-learning is the flexibility it provides to the school, the teacher, and the student [1]. E-learning and distance learning is education and planned learning in which teaching usually occurs in a diverse place from learning, involving communication through online services as well as to special institutional group [2]. E-learning simplify refers to the process of transferring the knowledge and skills through a global network with a use of information system applications which involve learning by web. These processes allow students to find necessary information about the course and to obtain necessary learning material [2] Distance education and E-learning is especially suited for students living in rural areas of the world such as in the Kingdom of Saudi Arabia. According to one source, "E-learning emerges as the fastest grown learning tool in the Middle East" [2].

The population demographics of Saudi Arabia inform current educational patterns in the nation. "Although education is considered a priority for the citizens of Saudi Arabia, it is not compulsory" [3]. In 1968 the Saudi representatives to the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) International Conference on Education provided the following reasons for its implementation:

(a) Education is highly valued by the adult citizens of Saudi Arabia and most children attend school without mandatory compulsion;
(b) Regular schools are not consistent with the Bedouin nomadic lifestyle;
(c) Other delivery methods of education, such as mobile schools, are more satisfactory for this segment of the population;
(d) Only 25% of Saudi teachers are citizens and (e) the teacher shortage of Saudis cannot be met even when teachers are recruited from neighboring Arab countries [3].

The CIA Fact Book [4] estimates that the total population of Saudi nationals is just over 20 Million, plus 5.5 million non-national residents. Thirty percent of the Saudi population ranges in age from birth to 14 years [4]. The median age of the Saudi population is 25.3 years [4]. In 2007, a report published by the UNESCO stated that the number of Saudi intermediate and secondary students totaled over two million. Government officials and educators must develop long-term plans to find alternate educational delivery methods to augment learning in traditional classrooms. Saudi educators are recognizing the need for a new philosophy of learning and the need to adjust to a more interactive learning model to meet the needs of growing numbers of Saudi students. Distance learning and E-learning may be the best solution to provide education to Saudi students and will also allow students to become proficient in using advanced technology.

Developing and implementing a comprehensive educational system is a major concern for Saudi government officials and educators. “The success of online education initiative depends critically on a core resource, namely the cooperation and full participation of faculty members who deliver quality instruction” [5]. Saudi Arabia has over 24,000 educational systems with learners registered at various grade levels [4]. These public schools include 12 colleges and universities, vocational and technological schools, girl’s colleges, and religious schools that include a wide and diverse programs in numerous academic disciplines [5], Males attend school for 14 years and female students for 13 [4]. The total literacy rate for the Saudi population is 78.8% [4].

The large number of children and teens in the Saudi population exerts pressure on the public educational system. Luschei, Dimyati and Padmo. Comment that until now, Saudi Arabia create new schools and campuses in an effort to cope the large number of students in Saudi [6]. At the present time it is accepted by government officials and educators accept that it will no longer be possible to accommodate the large number of potential students for numerous reasons. Saudi government officials and educators are evaluating distance education and E-learning as possible delivery methods [5]. This approach will solve two major problems by providing an alternative, an overwhelmed public education system in the form of a delivery method that is beneficial to students living in remote locations. Ultimately, by reviewing literature on distance education, E-learning and education in Saudi Arabia, the author hopes to demonstrate the efficacy of employing learning technology in the kingdom to promote effective education as well as social and economic development. The author will present the benefits and drawbacks to such a system and discuss how the Kingdom of Saudi Arabia might institute this modern form of learning to the country’s benefit. This paper will discuss a variety of issues related to distance learning in Saudi Arabia, including government and E-learning strategies, education for Saudi women, specific institutions that utilize E-learning, the skills involved in the process, adaptation to technology, teacher and student attitudes toward E-learning, specific uses for distance learning, and learning and delivery methods.

Before discussing the issue in detail, the author will define E-learning. He will use this term to refer to online education provided by accredited academic institutions. Classes operated online by colleges such as the Arab Open University (AOU) periodically meet face to face, but the student-teacher interactions primarily take place online, often allowing learners to bridge great physical distances. For its ability to bridge learners and educators across wide spaces, the author will use the term distance learning as a synonym for E-learning.

2. GOVERNMENT AND E-LEARNING STRATEGIES

Although the government of Saudi Arabia has no history of implementing technology in educational settings, other nations across the globe have policies that the country to implement it, such as Ghana which e.g. organized very successful world conference E-Learning Africa, in Acra, May 2008 “In Ghana, adult education is primarily focused on providing education and human resources training to individuals at all levels so they can solve the most pressing issues adults face in their quest to make a better living” [7] However, other authors [8] present a different, more realistic perspective. These authors state: “Government and institutional personnel in developing countries often decide to employ E-learning or online learning without fully realizing what it means for their students and their institutions” [8].

Students in nomadic groups or who live in communities that do not receive electricity are ineligible to adopt distance learning or E-learning. These barriers, the government of Saudi

Arabia must be thoroughly investigated prior to investing scare resources into delivery methods may not work. Certain authors suggest that “it may be better to use the limited funds to encourage greater school attendance, ensure students are well fed, and/or hire more tutors” [8].

Another perspective is that technology is not the only solution to Saudi Arabia’s educational problem. Effective teachers, whether in the traditional classroom or using other delivery methods, are the most important element in education [1]. As author states: The past decade provides strong evidence that misguided policies and funding for Internet communication technology (ICT) in education may fail to have the desired education outcomes, while costing more than other education interventions. [1]

Additionally, some governments and educators support the idea of online learning for the mistaken reason that it provides a cost benefit [8]. These same individuals view distance education, E-learning, and the Internet as a panacea for lack of funding for their failing educational systems. It is possible to realize cost savings if enough students participate and fewer schools need to be built by the government of Saudi Arabia [9]. However, teachers, administrators, production teams, and technical support crews are still needed which requires substantial funding. Producing high quality E-learning and distance education courses is expensive.

Additionally, E-learning use by Saudi students as a transformer that enables changes in the way that learning takes place. Information systems technology learned that the most important feature was not what can be captured and stored, but releasing tacit knowledge and multi-layered ideas that build on previously acquired knowledge. According to [8] there are advantages to the government and the population for implementing distance education. Reasons for presenting distance education include introducing technologies to Saudi students, accessing global information, communicating through social networks, utilizing asynchronous and synchronous learning, and spreading academic materials such as simulations, graphics, and virtual experiences that cannot a traditional curriculum cannot include. Under appropriate right conditions, distance education assists those within the population who are poor or live in rural areas.

Furthermore, “While shiny new technology appeals to politicians and educators alike, it should not be adopted uncritically or without careful planning” [8]. Saudi Arabia must determine if all necessary conditions to offer distance education prior to a commitment of such a program. Using an example from Asia, computers were requested from the local government but installation was not completed for two years after that request was made. By that time, many updates and technological advancements rendered the hardware, equipment and software outdated. In the meantime, many educators who requested these systems no longer held the same positions due to retirement, termination, or transfer to a new position. The willingness of governments and institutions to adjust practices and processes indicates of the success of distance education implementation. For example, if the technology and skills are available, E-learning can solve many public education problems in Saudi Arabia. Students living in rural areas do not have to travel for services such as registration, use of the library, and health centers [8].

3. DISTANCE EDUCATION IN SAUDI ARABIA

The Kingdom of Saudi Arabia is an ideal environment and for providing distance education to a widely scattered and remote student population. Although internet access is expensive

in the Persian Gulf, it is a good investment for the Kingdom when education may otherwise prove impossible for a high percentage of young citizens [10]. “As the Saudization in all sectors of the economy is accelerating, matching capacities of the national workforce with the needs of the knowledge and information society is becoming a big challenge for the public and private sector” [10]. At the present time, the traditional classroom educational system cannot evolve rapidly enough to accommodate the needs of Saudi society.

The education policy in Saudi Arabia was very simple for many years: the primary method to obtain a quality education was through outsourcing [3] but due to current events, a new way of thinking in the world had erupted, prompting the kingdom to make future plans to keep more students at home and conduct a long-distance learning program. “Saudi Arabia has been slower than many nations to move into distance education. The Kingdom has had a very short history of using printed, electronic, or broadcast means for student who are not physically on site” [11].Facing a high percentage of Saudi citizens requiring public education, the Kingdom is faced with capacity issues and the need to improve skills and knowledge throughout the population, the Saudi government recognizes that distance education may be the most expedient solution [11]. However, traditional universities currently offer bachelor's degree programs, and policies for distance, single- and dual-mode, and virtual tertiary courses are in development for approval by the Ministry of Higher Education. Al-Imam Mohammad Ibn Saud Islamic University and King Abdulaziz University are dual-mode, while Arab Open University offers single-mode distance education.

Admission to Al-Imam Muhammad ibn Saud Islamic University is open to all Saudi and non-Saudi students in all majors. Daily lectures transmitted on the internet can be viewed live, or recorded and posted on university’s website for convenient viewing. Student can communicate with lecturers via forums, emails, and virtual classrooms. Enrollment has increased from 6,000 in 2008 to more than double the number of students within one year [11].

A distance learning program offered by the Deanship and Faculty of King Abdulaziz University Jeddah is designed to service online learning opportunities to the Western region of Saudi Arabia. Beginning with its first academic year in 2007-2008, Saudi Arabia study programs were offered in the Arts and Humanities Department, as well as the Economics and Administration Department. These programs combine a virtual classroom system internet lectures and the E-learning management electronic system that facilitates interaction between students and faculty [11]. The university requires appropriate certificates of all faculty members and also provides training for those teachers who must upgrade their qualifications. Students who use the system must have certificates stating their proficiency in all technological areas required to function in a distance learning environment.

Due to its remoteness, shared with the government’s policy to offer educational services, establishing distance learning has a high probability of being a viable alternative. “The open learning platform employed by the Arab Open University is a form of distance education with added enhancements to ensure a quality learning experience for students” [12]. AOU has a strict quality assurance system to ensure that students can access learning materials and rapid feedback from instructors and administrative staff. Despite the existence of new education system and plans to increase and develop growth of technology in the Saudi Arabia, an outsider observing this transition along with many other Saudi officials may see their efforts in vain, as many of them believe that there is a resistance to the introduction of Internet access without limitations [1,3].

4. EDUCATION FOR SAUDI WOMEN

The main elements of the progress of e-technology implementation in Saudi Arabia are not so much technical but instead a result of cultural influence of new technologies [1]. Distance education has value for the Kingdom of Saudi Arabia as a means to educate girls and women. Distance education technology is used to improve and enhance educational opportunities for female students successfully used to teach and graduate over 300 master MBA program students enrolled in 36 Girl's Colleges. The Girls' Colleges project is now affiliated with the Princess Noura University.

This project began in 2006 and currently offers economic, religious and cultural lectures broadcast across the Kingdom [13]. Distance education provides an opportunity for women of all ages who have home and family to pursue an education [10].

Professional training via distance learning is available for women to attain certificates necessary for their job descriptions. This opportunity can provide courses in various categories such as (a) bridging courses that allow professional women to upgrade their skills and knowledge at the point of re-entry to the workforce; (b) conversion courses that provide an opportunity for women who left their schooling before attaining high school or university degrees and (c) community based programs that provides education directly related to Saudi women's traditional roles [10].

One pilot project is targets Saudi professional women [5]. "The project proposal is representing an effort to empower professional women in Saudi Arabia with adequate skills and tools to perform better, to become more productive, and to grow professionally"[13]. Courses provided include interpersonal skills, executive level management and information technology using the internet and supported by CD-ROM material.

Additionally, physical classrooms are available to provide for students who prefer that experience. Each classroom is equipped with computers and cable or WiFi as well as all necessary supplies and materials to complete each session. Three valuable classroom locations in the Kingdom include Jeddah, Dammam and Riyadh.

5. ARAB OPEN UNIVERSITY

Arab Open University is a private, non-profit university founded in 2002. The school began with facilities located in Lebanon, Kuwait, and Jordan during its first academic year and later opened branches in Egypt, Bahrain and Saudi Arabia. The university has been accredited by the National Commission for Academic Accreditation and Assessment (NCAAA) and the Ministry of Higher Education [11]. Sponsored by the Arab Gulf Program for United Nations Development Organizations, the Arab Open University is affiliated with the United kingdom Open University. Areas of study include the English language, business, and information science.

The Arab Open University's system uses the Modular Object-Oriented Dynamic Learning Environment (MOODLE), face-to-face lectures, interactive multimedia lectures, practical sessions and study texts. Lectures are available on DVDs, iPods and streaming video. Classroom facilities provide computers and WiFi access are available with separate male and female classrooms. Classrooms also provide multimedia kits and video-conferencing

equipment in both male and female classrooms. Projects are in place to provide all students with laptops [11].

The Arab Open University's digital library subscribes to numerous online resources that are available to students as part of the learning-management system. Arab Open University attendees must be high school graduates, fluent in verbal and written English and pay the school's tuition [11]. The advantages of affiliating with the U.K. Open University system includes the opportunity to collaboration with U.K. teachers and administrators, obtain a licensing agreements, use of U.K. learning materials and achieving accreditation by the "U.K. Open University Validation Services and award its own degrees" [12]. Few students in Saudi Arabia are aware of the opportunities that this institution provides. The government of Saudi Arabia should strive to bring this institution to citizens' attention to successfully implement access to online learning.

6. KNOWLEDGE INTERNATIONAL UNIVERSITY

In 2008 the Knowledge International University (KIU) was launched as the first Saudi Arabian virtual university. It is an Islamic, non-profit, virtual university offering bachelor's degrees from its College of Islamic Studies and College of Sharee'ah and Qur'anic courses for students who do not speak the Arabic language [14].

KIU sought the expertise of international scholars and administrators to oversee and deliver curriculum focusing on traditional disciplines. Applicants must hold a high school diploma or pass an entrance exam [14]. Course content is delivered using a combination of PDF, recorded and live lectures. To fulfill course requirements, students are required to listen to at least 20 lectures in the delivery method of his or her choosing.

KIU students are currently pressuring the university to include more courses and classes as well as seek accreditation from the Ministry of Higher Education. The accreditation process depends on the finalization of regulations from other international and Arabic institutions. To earn a degree from an KIU, students must present evidence of residency during enrollment. The second option for many Saudi students is to enroll in online academic programs with accredited universities, such as the American-based University of Phoenix.

According to one source, "the increasing population rates and expansion of the main cities in Saudi Arabia, distance education would appear to be an obvious means of widening access and offering quality and flexibility in programs of choice" [11] . However, the reputation and validity of distance education continues to present a problem. For example, university teachers and staff feel that employment by distance education is not as rewarding as a traditional school and students will have fewer career opportunities. Some students prefer to continue with a traditional classroom and physical facility where they are more comfortable and do not have to make changes. Some students want to continue "with traditional classroom education and lack the motivation for self-directed learning" [11]. However, the author expects these complaints to diminish with time as the advantages of distance education become more apparent. To further illustrate this point, the author will outline the process of E-learning.

7. E-LEARNING AND SKILLS ACQUISITION

E-learning can be used by the government of Saudi Arabia as either an amplifier or a transformer. The initial focus on computer-based education was to make the existing practices more accessible and efficient. The goal was often to introduce technol*ogy* to augment the traditional face-to-face curriculum resulting in an amplification of the existing traditional classroom.

As learning technology developed, it expanded to include distance education as an alternative to no educational opportunities at all for certain demographics such as individuals living in rural or remote locations [15]. Additionally, technology can be used as a transformer that enables changes in the way that learning takes place. Information systems technology showed that the most important feature was not what can be captured and stored but releasing tacit knowledge and multi-layered ideas that build on previously acquired knowledge [15].

Technology should be used to increase efficiency and effectiveness in the learning process. An effective instructional approach must include (a) a student-centered approach [8]; (b) effective lesson plans [16]; (c) content that is meaningful to students [17]; (d) content that is culturally appropriate [2]; (e) curriculum that support state standards [16,5]; (f) build academic, life and work skills [18]; (g) provide an opportunity for feedback and assessments[18] and (h) require critical thinking [16].

Comparison of Taiwanese and American students found “more similarities than differences in self-efficacy beliefs regarding mathematical competence” [19]. Participants’ ratings were almost indistinguishable in self-efficacy beliefs from both countries concerning math problems but rated significantly different for intermediate problems. However, cultural contexts may have influenced the students’ beliefs and judgments [19]. As literature on countries beyond Saudi Arabia shows, successfully implementing E-learning can result in significant benefits.

One study conducted in Louisiana focused on the academic achievements of elementary and middle school students from poor and low income households placed in classrooms with state-of-the-art technology [20]. The study matched the experimental group with a control group learning the same material in traditional classrooms. Throughout the academic year, students in both the experimental and control groups examined for academic performance. Students in Louisiana administered pre- and post-tests in self-esteem and as they progressed through the study. The test scores did not show a significant difference between the control group receiving traditional teaching methods compared to the experimental group in the area of reading. Nevertheless, the scores revealed a significantly higher achievement in mathematics and student self-esteem for participants enrolled in the technological curriculum. The authors of this study suggests that these data are important for future curriculum design and instructional delivery [20]. Saudi Arabia should take advantage of similar E-learning opportunities to benefit students.

Furthermore, E-learning can increase skills beyond mathematical competence. A study was conducted during the 2007-2008 academic year in 35 Canadian secondary schools of students living in remote areas of Newfoundland and Labrador [21]. Sixty-seven percent of the participants were female compared to 54.3% of all Canadian students and 33.0% of participants were male compared to 45.7% of all Canadian students. Of interest to the present study, 93.8% of distance E-learning students described themselves as skilled in the

use of computers compared to 70.2% of all Canadian students. In the category of reading skills self-efficacy, 99.1% of study participants rated themselves as proficient compared to 85.0% of all Canadian students [21].

Nevertheless, the results indicate that literacy skills and technological proficiency determine who will participate and ultimately succeed in distance E-learning programs. “Consistent with the results of earlier investigations, students whose perceived self-efficacy with computer technology is higher relative to their peers are more likely to pursue distance E-learning” [21]. E-learning benefits society at large beyond simply educating students and Saudi Arabia’s government should immediately formulate plans to harness these technologies to improve the flow of information through society.

Saudi English-learners can also find uses for technology in their studies. Researchers discuss the experiences of first time E-learners in professional development for school leaders and teachers in the Maldives [17]. This case study focused on five public school personnel who took E-learning courses including English language. These participants lived in “rural, hard to reach places” where approximately 66% of the teachers have ten years of basic education” [22]. Fewer than 50% had received teacher training [23].

A related issue involves the level of preparation of the student population for college- and university-level education as a result of their deficient basic education as mentioned by one author “In many instances, the level of subject knowledge of primary teachers is below the level of the students whom they teach” [17]. In preparation for this government to expand academic delivery methods to include distance education and E-learning, poorly trained teachers must first be educated to subject content and technological issues they will face as teachers in the Maldivian public school system. “In order to establish online learning communities for teachers and children of Maldives, it is crucial for school leaders to become learners and to be familiar with online learning to support teachers and to create online learning environments” [17]. The Saudi government could take further steps to promote the learning of English online to increase its presence in the global economy.

Unfortunately, E-learning does not come without its difficulties Untrained teachers in China, Nigeria, and other third-world countries present a problem when attempting to implement E-learning [9]. This is one of the most prohibitive issues confronting the movement toward global acceptance of E-learning. Other issues present in developing countries’ implementation of E-learning are culture and the gender gap. “These inequalities continue to exist despite the growth in communication and technology applications that are advocated to address the educational gaps in developing countries [9].

Indeed, many nations struggle to effectively implement distance learning. According to [7] distance learning in many African nations has proved to be limited and inefficient. “Information, communication, and technology seem to be struggling in the third world as result of inadequate infrastructure, financial constraints, and social or cultural barriers, as well as minimal government policies as compared to successful programs in the developed world” [7]. Access to higher education in developing nations is 5% lower than the world average of 16%. The 5% figure is represented in Ghana but the demand for vocational and professional studies is required to sustain the growing population. Saudi Arabia, while not a third-world country, should learn from the pitfalls that have afflicted these other nations so as to skirt problems associated with E-learning when designing its own national system.

8. ADAPTATION TO TECHNOLOGY

Acclimating to new technologies in any environment, particularly the classroom, takes time and significant effort by administrators, students and educators. In the United States, the adaptation to technology integration into the classroom has been overwhelming because it involves many different issues [24]. The cost of hardware, software, and Internet access has denied or delayed the incorporation of technology in many classrooms for at least a decade. Many teachers had minimal computer skills or failed to cope with advanced computer and Internet technologies that are the source of frustration when integrating technology and traditional lesson planning. In many cases, the onsite support has been lacking or the school districts did not adequately plan for these services in the budget. School districts may have been unaware of the need to provide technical support and assistance as teachers attempted to incorporate the latest technological innovations [25].

In comparing these more recent technological challenges in the classroom with prior electronic or mechanical challenges, an illustrative comparison is the projector. After the purchase of one or two projectors for each school at a relatively low cost and complexity, the "projector was used in the classroom for a decade or more before new equipment had to be purchased or adjustments needed to be made" [24].

For more than three decades teachers could easily incorporate the projector with few or no complications. This differ from the incorporation of computer and Internet components in classrooms since the 1990s. "The problem that classroom teachers face now and that school districts fail to provide is once professional development was conducted, no one monitored or supported the fidelity of implementation of the strategies in the classroom" [24].

Addresses the barriers that teachers face in attempting to incorporate computer and Internet technology into classrooms [1]. Teachers have not been adequately trained to exploit these technologies to augment existing lesson plans. Most teacher training sessions focus on software and hardware. Some authors suggests that school districts provided adequate training to all teachers as well as how to use the expertise of school librarians and onsite technicians for support [26]. Unless teachers receive more assistance and guidance, incorporation of technology into the classroom will continue to effort result in confusion and frustration.

Many researchers have recently begun to investigate the abilities of E-learning. One study examined how psychology students used interactivity in an online university setting [27]. One hundred five students participated in the study (73 women; 32 men) at Germany's Dresden University of Technology. The author of this study defined five functions required for proficient distance learning as (a) accessibility to various resources; (b) proficiency in internet navigation; (c) ability to process online information and materials; (d) the mental capacity to utilize multimedia interactivity; and (e) self-regulation. Eighty-five percent of the participants chose to use the interactive learning tasks rather than the 8% who used the transparency tool. The final 7% chose to use the note-taking tool [27]. The author indicated that, while some students continued to increase proficiency over time using computer assisted instruction, others did not utilize the all of the computerized features to their advantage [27].

Following this example, the Saudi government should take into consideration a number of factors that have affected E-learners in other countries. Learning from the experiences of E-learners in other countries will also help curtail potential problems. These strategies include

responding to student concerns, providing adequate technological support, employing proficient faculty members, and maintaining a legitimate pedagogical culture. To stem this problem before it arises, the government must employ a large enough staff of competent technicians to support Saudi E-learning systems and confront technological difficulties that might afflict students and instructors. Similarly, the Saudi government should construct support mechanisms for learners to learn from examples such as those identified at the Dresden University of Technology.

9. TEACHER AND STUDENT ATTITUDES

The level of distance education expectation has to meet the needs of the student and current Saudi public administration, with an equal or higher value than that which comes from other country to the kingdom for batter implementation.

One study was performed to distinguish the factors affecting students' contribution with online based on feedback from 120 E-learning students scheduled in learning classes offered by MBA/MPA plan by Allama Iqbal University [28].The results of the explore study demonstrated positive attitudes toward different aspects of online learning and its commitment and their acceptance [28].

The distance learning method has shown positive as illustrate by one author "The use of technology has dramatically changed the pedagogical structure and notion of the classroom" [28]. Student to student interaction usually includes personal experiences and examples, anecdotes and questions that enrich a distance learning course. Interacting with other students provides real life experiences and knowledge not included in textbooks [29]. These sorts of classmate interactions allows online students to identify more closely with the course content. This type of student to student interaction changes their attitude toward distance learning by developing a sense of community. "Without a feeling of community, people are on their own and are likely to be anxious, defensive, and unwilling to take the risks involved in learning" [28].

Longitudinal study conducted at Wake Forest University studied how American students felt about the use of computers and other technologies within their classroom [30]. Student attitudes developed over the course of the study were significantly positively correlated depending upon the teaching method. Among the important features of computer use included ease of access to the computer, and rapid and uncomplicated internet access to the internet were instrumental in generating positive attitudes. "Learning communities present higher education [planners and developers] with the ability to stimulate the curriculum such as integrating innovative collaborative learning techniques" [28]. As participants became more accustomed to using the computer and the internet, their attitude toward computer instruction improved.

Other studies have specifically scrutinized the role of E-learning in Saudi Arabia. In a similar study by [31] the attitude of teachers and students in Saudi Arabia were examined. The study focused on evaluating different computer assisted instruction software at the King Fahd University of Petroleum and Minerals. Control group in traditional classrooms and experimental group using computerized programs were evaluated in mathematics. Participants ranked a self-guided program developed by Larson and Hostetler from Houghton-Mifflin Company highest that contained quantitative and qualitative measures. This multimedia program featured a glossary and user friendly interface. The qualitative portion of the program was tested online with participants responding positively to the online

experience with better performance than the control group with classroom tests. Teachers reported a slight but steady improvement in attitude toward incorporating computer and online technologies into the traditional lesson plans.

10. SPECIFIC USES FOR DISTANCE LEARNING

Schools ranging from elementary through post-graduate schools using E-learning and distance learning to address specific educational issues [32]. This report states that 97% of junior colleges in United States provided one year remedial mathematics courses for 35% of the entering freshmen. Another study examined how distance learning is used to improve learning and retention of math concepts [32]. Three schools in the study, or 41%, reported a cost reduction of 2.7% to 5.7% because E-learning classrooms can enroll larger numbers of students than traditional classrooms [32]. The results of this study provide valuable information for the Saudi government in planning and implementing distance learning programs.

One empirical study examined if there was a significant difference in reading and mathematics achievement when using the Terra Nova Full Battery Standardized Test [33]. Subjects were seventh graders already proficient with computer and Internet use as well as familiar with accessing academic websites. The study focused on reading and mathematics skills including concepts, comprehension, application, and recall. The researchers found that participants who used computerized programs for mathematics drill and practice achieved a slight but significant effect when explaining mathematical concepts [33].

The effectiveness of distance learning and computerized programs to teach the complex subject of Fluid Mechanics Concept Inventory (FMCI) in a university engineering course was examined [34]. Students consistently struggled in pretests with “pressure measurement, fluid flow through pipes with changing diameters, and velocity profiles for fluid between flat plates. The distance learning program was developed specifically to address these areas of instruction” [34]. The program used a combination of subject content and simulations to demonstrate the course principles. Used in conjunction with traditional classroom instruction, the posttest findings suggest significant improvement in scores in two of the areas covered in the instructional program.

Most classrooms include students testing at different levels of proficiency. Some students may be interested in teams working with other students in problem solving or cooperative educational activities. Additionally, some schools or teachers may be interested in topics across the curriculum that incorporates a variety of subjects such as language arts, history, and political science. Computerized programs such as ASSURE provide teachers in Saudi Arabia the opportunity to overcome these previously challenging teaching situations and allow their students to work together with other students on projects from their homes. This program can also be used to involve students grouped by similar proficiency levels to complete brain-based projects [35].

Other observed the elementary classrooms where young students used Yahoo and Google to access academic websites to complete hands-on projects [36]. Students created documents by pulling content including graphics, spreadsheets and text, from numerous websites providing the opportunity to experiment with formats and fonts. The final drafts in the websites of web pals around the world. Other forms of communicating between web pals include video conferencing and webcams that allowed images and voice communication in real time. This approach to independent E-learning would be suitable for Saudi students to

communicate with peers across the world. Involvement and mastery of advanced technology at this young age sets the foundation for students to remain abreast of new innovations throughout adulthood.

In an effort to increase student knowledge and experience, many schools attempted to schedule field studies, especially in natural science classes. Researchers compared middle school students experience and knowledge between a computerized program and a field study [37]. Pretest and posttest scores indicated that both methods were comparable. The study focused on students' familiarity with nature and computer proficiency. Prior computer skills "were inversely related to knowledge gain for students in the computer control group" [37]. This study has implications for Saudi school districts that find it difficult to transport students away from the school but still want to provide a traditional classroom experience.

11. LEARNING STRATEGIES AND DELIVERY METHODS

The Saudi Arabian government can develop a number of methods to effectively integrate E-learning into its educational infrastructure. Scholars considered variables in computer-mediated courses. The study results indicate that distance learning programs provide building blocks for design of effective courses and this instructional format has an a priori significance in what outcomes results from the use of these building blocks [38]. The purpose of this study was to investigate the use of technology to assist students in note taking in preparation for exams as compared to traditional learning strategies such as reading a textbook and taking hand written notes.

Technologically sophisticated students also had better attendance and achieved higher grades than other students. Moreover, another study conducted in a classroom setting found that the best study strategies include various technological features such as archived audio-video lectures, computer-prepared lecture notes, an online syllabus, and the use email to contact instructors [39].

[40] compared (a) a traditional educational delivery method; (b) online delivery; (c) a computerized instructional model; and (d) television. The number of participants was evenly assigned to each of the delivery methods. Findings indicate that the teacher-centered, traditional classroom environment produced slightly higher posttest scores than computerized instructional program, which was one-half a grade lower than traditional instruction.

Olusi's study also compared traditional and computerized instructional program methods for mathematics instruction in an Edo State, Nigerian secondary school [41]. The research examined pretests and posttests scores. Findings of the study indicate that the instructional program positively influenced subjects' understanding and performance in the subject area. Nevertheless, the findings indicate that the combination of online instruction with traditional instruction allowed subjects to achieve their highest proficiency for both genders.

In 1997, the World Bank established the African Virtual University (AVU), a virtual higher education available to the entire sub-Saharan African nations [7]. AVU began as a pilot-study that later evolved into a non-profit organization that now serves 27 countries. The goal of this organization is to provide educational opportunities to all adults seeking all levels of education and vocational interests in an effort to promote economic development of these sub-Saharan nations.

AVU uses asynchronous and synchronous technology to deliver content, coupled with email, fax and telecommunication for discussions and questions. Additional teaching methods include live lectures transmitted via one-way video and videotape. The university utilizes content and materials developed by universities outside of Africa that covers a wide spectrum of text and visual learning materials in numerous subjects. Government officials and educators in Ghana pursue distance education as a better alternative than providing no educational opportunities at all. [7].

Ultimately, third-world nations such as Ghana and Nigeria have incorporated distance learning into their national educational structures to great effect. Given the innumerable resources at its disposal, the Kingdom of Saudi Arabia should attempt to follow this model. The political and economic capital within the nation could easily facilitate the development of E-learning across Saudi Arabia.

12. CONCLUSIONS

Distance education and technologies are growing rapidly throughout the world in cities and remote areas. The terms distance education and distance learning refer to a variety of learning technologies and methods [42]. Distance learning is available in a variety of forms that include asynchronous technology, a separation of location and/or time between teacher and students, among students and/or between students and learning materials. Teachers and students usually do not have an opportunity to meet face-to-face but may occasionally speak over the telephone or live camera view by SKYPE or other the latest technological amenities. However most communication occur online via email or on the designated course website.

Distance education and E-learning is quickly becoming a major trend in educational delivery methods because of technological advancements. Many third world countries have explored this method as a means to educate their growing youthful populations. While there are many possible advantages, crippling disadvantages accompany these methods, as well. Asynchronous technology and the accessibility of this delivery system allow students to establish their own schedules and work at their own pace. However, the cost and lack of infrastructure may be overwhelming. E-learning is very affordable, and saves the time of all involved stakeholder groups (educators, students, and corporations) [1]. But need a good prepared training teachers with connection of electricity, internet and computers.

Knowledge has become an economic force par excellence [10]. The modern world is a global village, events are accelerated, and countries are economically intertwined with many others. Education has been a necessity in order to cope with the modern world and in many ways, the best solution is to offer distance education to everyone. Distance education and E-learning is especially suited for students living in rural areas of the world such as in the Kingdom of Saudi Arabia indeed E-learning has grown rapidly in the Middle East [3].

While Saudi citizens place a high priority on education, the government has not made it mandatory [3]. In 1968, Saudi representatives to the UNESCO International Conference on Education provided the following reasons (a) education is highly valued by the adult citizens of Saudi Arabia and most children attend school without mandatory compulsion; (b) regular schools are not consistent with the Bedouin nomadic lifestyle; (c) other delivery methods of education, such as mobile schools, are more satisfactory for this segment of the population; (d) only 25% of Saudi teachers are citizens and (e) the teacher shortage of Saudis cannot be met even when teachers are recruited from neighboring Arab countries[3].

COMPETING INTERESTS

Author has declared that no competing interests exist.

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