

An Assessment of the Readiness of a Tertiary Healthcare Organization
in Riyadh, Saudi Arabia, in Adopting Effective Online Staff
Development Programs

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Abstract

Objective

The purpose of this research was to determine the preparedness of a tertiary healthcare organization, in Riyadh, Saudi Arabia, to adopt online education as an alternative method to traditional education in order to provide staff development programs to its employees.

Methodology

Two surveys were used in this research. The Online Learner Readiness Self-Assessment Survey was used to collect data from the employees' group while the Faculty and Administration Survey was used to collect data from administrators at different managerial levels and instructors at all departments. More than 1000 copies of "The Online Learner Readiness Self-Assessment Survey" were sent to employees from randomly selected departments and more than 400 copies of "The Faculty and Administration Survey" were sent to all administrators and instructor. The usable surveys were analyzed using both descriptive analysis techniques to determine the overall readiness of the organization. In addition, Spearman's correlation analysis was used to determine the relationships between dependent and independent variables.

Results

51% of "The Online Learner Readiness Self-Assessment Survey" and 40% of "The Faculty and Administration Survey" were completed and returned. The majority of respondents from all groups had positive attitudes and beliefs about online education. The vast majority of employees have access to technology and were motivated to use online programs and the majority of administrators and instructors had positive attitudes towards the provision of online education in their organization.

Conclusion

Analysis of the results suggested that this tertiary healthcare organization is ready for online education. However, blended education should be initiated at the beginning to overcome the change resistance and to gradually introduce this promising new educational method.

Key Words: Online readiness, Online education in Saudi Arabia, Online medical education, Medical education in Saudi Arabia, Tertiary healthcare in Saudi Arabia.

Introduction

Continuing education is required for licensure and credentialing in most healthcare professions (Hager, Russell & Fletcher, 2008). In addition, the nature of the healthcare profession mandates its providers to adopt the concept of life-long learning. Therefore, healthcare providers spend more years in continuing medical education (CME) than they do in their initial formal training (Hager et al., 2008). Since healthcare is rapidly advancing, in coordination with the fast pace of technology growth, healthcare organizations need to provide their staff with access to continuous education (Samuel, 2002; Braido et al., 2005; Laffel & Berwick 1993). Healthcare professionals usually obtain continuing education credits by attending traditional education in the form of medical conferences, workshops and face to face presentations (Davis, Davis & Bloch, 2008).

Professional Development (PD) focuses on the medical staff's acquisition of knowledge, skills and competence (Cathcart, 2008). In addition, professional development should be learner centered, include reflective inquiry on real case studies, involve a combination of lectures, discussion and case studies. Furthermore, transfer of knowledge and skills to the work context are important in professional development (Cathcart, 2008). Continuous professional development (CPD), on the other hand, is an extension to the continuous medical education in the medical field. In continuous medical education, physicians and allied health professionals are required to complete a set number of credit hours in order to maintain their licensure. The aim of CME is to update the knowledge and skills of medical personnel in their specialties (Stewart, 2008; Gerkin, Taylor & Weatherby, 2009). However, continuous professional development is concerned with the outcomes of the required credit hours. In addition to certifying the acquisition of new knowledge, healthcare providers are also required to show competence in their work evident by employer appraisal, patients' feedback, clinical audits and other forms of assessments (Stewart, 2008). It can be said that the word "continuous" in continuous professional development is concerned with continuously raising the bar of competence for healthcare professionals.

In healthcare organizations, the resources allocated for training is limited due to the escalating cost of healthcare delivery (James, Timothy & Thomas, 2008; William & David, 2008; Dee, 2008). Furthermore, the scarcity of human resources in healthcare (Linda & Fiona,

2008; Francis, 2008) increases the demands for quality and efficient training where fewer resources can be utilized to achieve a good quality education.

Tertiary healthcare organizations in Saudi Arabia provide specialized care and receive patients' referrals from hospitals from all over the country. This study was conducted in a tertiary healthcare organization that is composed of four hospitals which specialize in pediatrics, women, rehabilitation and general care including cardiology and oncology. In addition, it is an approved teaching institution for local medical and allied healthcare colleges. Continuing education is conducted at this organization through traditional presentations and arrangement of national and international medical conferences. Despite the availability of technology and management support, other forms of education, such as online education, is rarely conducted in continuing staff development programs. When properly designed, online education can provide an effective alternative to traditional face to face medical education courses (Ryan et al., 2007; Francis, Mauriello, Phillips, Englehardt & Grayden, 2000).

Learners in an online context are different from those in a traditional face to face environment. E-learners are usually working full time and have family commitments (Mihhailova, 2006; Maor & Volet, 2007). In addition, they expect the content of their studies to be related to their daily work (Maor & Volet, 2007). In order to succeed in online instruction, e-learners must be motivated to accept some responsibility for their own learning (Moore, 1973; Moore & Anderson, 2004). Furthermore, they should be able to use technology in communication and be able to participate actively in discussions.

Instructors in online education are a major determinant of the success of the experience. Their role in the online environment is to facilitate the learning by active participation, directing and guiding learners in the process (Youngblood, Trede & Corpo, 2001; Marks, Sibley & Arbaugh, 2005). Since the interaction between students and their instructor is limited in e-learning, instructors are expected to put more effort when facilitating online instruction. In addition, they should be competent in utilizing all available communication tools to interact with the learners (Mayzer & Dejong, 2003).

The infrastructure of the organization is critical to the ability to provide online education. The administration must advocate the provision of e-learning by helping other stakeholders overcome arising obstacles. In addition, administrators must closely observe and monitor for frequent obstacles that may affect the outcome of the experience. Obstacles such as instructors'

workload and learners' readiness are some problems that may affect the quality of e-learning (Youngblood et al., 2001; Suanpang & Petocz, 2006; Whitmore, 2005). In addition, the administration should work toward achieving and maintaining the quality of online education by adhering to current standards and cooperating with other organizations that are experienced in online applications.

The purpose of this study was to assess the extent of readiness this tertiary healthcare organization has regarding the use of effective online staff development programs. Our purpose was to assess administration's support and beliefs about e-learning. In addition, the aim of this study was to assess instructors' skills and attitudes towards online education. Furthermore, the purpose of this study was to discuss and analyze the employees' readiness for effective online education by assessing their access to technology, motivation towards participating in online education and their attitudes towards online education.

This research study investigated the attitudes of employees, instructors and administrators toward online education at a Saudi tertiary healthcare organization. Their attitudes and skills were analyzed to determine the extent to which this organization is ready to adopt online education programs. This research was guided by the following questions:

1. What are the learners' strengths related to their readiness for online education?
2. What are the learners' weaknesses related to their readiness for online education?
3. What are the relationships between selected learners' demographic variables (occupation, age, gender, nationality, years of experience and educational level) and their online skills and relationships, motivation and internet discussion abilities?
4. What is the relationship between learners past experiences with online education and their motivation towards e-learning?
5. What are the relationships between selected instructors' demographic variables (age, gender, years of teaching experience, and country of graduation) and their attitudes toward using online continuing education?
6. What are the attitudes of the administration toward the provision of online continuing education?

Methodology

Data were collected using two surveys. The employees, the instructors and the administrators were surveyed using validated instruments. Both surveys were available to

respondents in English and Arabic. The Arabic translation of the surveys was validated by academic professionals who are native speakers of the Arabic language.

Participants

Participants of this study included employees, instructors and administrators. These three groups of people were selected to participate in this study because they constitute the major stakeholders of online education. The administrator group included the executive officers (EO), associate executive officers, hospitals' directors, department chairs, section managers and supervisors. About One hundred and fifty (150) administrators at the determined administrative levels were selected to participate in this study. Participants also included around one hundred (100) instructors and educators from all departments including nursing education, clinical education, life support education and administrative education. All clinical and non clinical instructors were selected to participate in this study. In addition, participants included the employees at different departments. A random sample was selected from more than two thousand employees from different occupations. The target population included all occupations including medical, nursing, specialists, technicians and administrative staff.

Procedure

This research used two different instruments to collect data from the three groups. Data from the administrators and instructors groups were collected using the Faculty and Administrators' Survey (Alharbi, 2002). The employees' group was surveyed using the modified version of the Online Learner Readiness Self-Assessment Survey (Watkins, Leigh & Triner, 2004). The researcher worked with the research center at this organization to complete this research. Paper-based surveys were distributed by the research center. The researcher was responsible for the randomization and the overall methodology. The research center was responsible for distribution, follow up and collection of the completed surveys. The research center involvement assured anonymity of respondents and gave the surveys to the researcher when they were completed without identification of the respondents.

Instrumentation

Data were collected using two surveys. The employees, the instructors and the administrators were surveyed using validated instruments.

Employees were surveyed using The Online Learner Readiness Self-Assessment Survey which consisted of twenty seven questions distributed over six parts. These dimensions measure

the learners' access to technology (n=3), online skills and relationships (n=9), motivation (n=3), online audio and video skills (n=3), internet discussion (n=4) and the importance of online to the learners' success (n=5). The learners were asked to rate their skills and attitudes towards online learning by selecting from five choices 1 "completely disagree", 2 "strongly disagree", 3 "not sure", 4 "strongly agree", and 5 "completely agree". A demographic part was added to this instrument and it included age, gender, occupation, educational level, years of work experience. In addition, this part also included a question that asks about the participants previous experiences with online education. Furthermore, this part included questions that ask about the respondents' access to a computer and an internet connection at work and at home.

The face validity of the learners' readiness instrument was assured by its development. This instrument was initially developed and revised by experts in the field of distance education from three different Universities (Watkins, Leigh & Triner, 2004). This instrument showed an overall Cronbach's alpha of 0.88 (Watkins et al., 2004).

Instructors and administrators were surveyed using a modified version of The Faculty and Administration Survey developed by Alharbi (2002). Parts I and II of the survey were customized for healthcare organizations' use since the initial survey was designed for academic use. Part I of the survey asks questions about the respondents' job-related and demographic variables. The first part of the survey was modified to include the respondents' age, gender, occupation, educational level, years of work experience, nationality and country of graduation. In addition, the first part of the survey included questions that ask about the access to computer and internet connection at home and at work.

The second part of the survey consisted of twenty two questions that are related to the faculty members and administrators' attitudes towards online education. This survey uses a 5-point Likert scale in which respondents were asked to select from 1 "strongly agree", 2 "agree", 3 "neutral", 4 "disagree", and 5 "strongly disagree". The validity of this survey was established by Alharbi (2002). In addition, the instrument showed an overall Cronbach's Alpha of 0.93 which ensures its reliability.

Data Analysis

The data collected in this research were analyzed using both descriptive analysis and inferential statistics analysis. Measures of central tendency, measures of variability and

frequency of responses were used to analyze research questions 1, 2 and 6. In addition, research questions 3, 4 and 5, were also analyzed using the Spearman correlation coefficient.

Results

The response rate differed between the staff category and the administrators and instructors category. In the staff category, one thousand (1000) surveys were distributed to all departments. Five hundred and sixty (560) surveys or 56% were returned to the researcher. Of these, five hundred and eight (508) surveys were analyzed and fifty-two (52) incomplete surveys were discarded. There was a return rate of 51%.

Four hundred (400) surveys were sent to both the administrators and the instructors at KFMC. One hundred and ninety five (195) surveys were returned (49%). Only one hundred and sixty four (164) completed surveys were used to analyze data. Of the one hundred and sixty four (164) surveys, one hundred (100) were answered by administrators at different managerial levels and only sixty four (64) instructors from different departments. The combined response rate for all categories was 50%.

Employees' Demographics

Of the 508 employees surveys, 48% (n=244) were male and 52% (n=264) were female. Respondents included 15.7% (n=80) physicians, 17.1% (n=87) nurses, 16.9% (n=86) specialists, 26.4% (134) technicians and 23.8% (n=121) administrators. More than half of the employees sample were Saudi nationals (58.3%, n=296) and about one-fifth of the sample were from the Philippines (20.9%, n= 106). Almost three quarters of the employees' sample (74%, n=379) did not take online courses in the past while 25% (n=129) reported having online education experience. More than half the employees' sample (51.8%, n=263) were between 20 and 30 years of age, while only 15% (n=79) were older than 40 years of age.

Administrators' and Instructors' Demographics

Of the 164 usable surveys, almost two thirds (n=100, 61%) were administrators at different levels and about one third (n=64, 39%) were instructors from different departments. Half of the administrators' and instructors' sample (n=84, 51%) graduated from Saudi Arabian universities or from institutions of higher learning in other Arab countries. Around one fourth of the sample (n=38, 23%) graduated from Western countries. Male respondents represented around half the sample (n=83, 51%) while females represented the other half (n=81, 49%). In addition,

the sample consisted of almost half (n=86, 52%) Saudi nationals and about half (n=87, 47%) non-Saudi nationals.

The vast majority of the instructors in this study (n= 53, 83%) had no online experience. In addition, almost half of the administrators were from the lower level of management (supervisors) (n=48, 48%) while the sample included 3% (n=3) from top management (executive officer, associate executive officer, hospital director) and 49% (n=49) from the middle management (department head or section manager). Although the top management counted for only 3% of the total sample collected from the administrators group, the actual number of top management positions at this institution (executive officers, associate executive officers and hospital directors) is eleven (11) which makes the actual percentage of respondents from top management 27%. Table 1 summarizes the managerial levels of the administrators' group.

Table 1

Administrators' Managerial Level

		N	Percent	Cumulative Percent
Administrators' managerial level	Executive officer or Associate E.O.	2	2 ^a	2
	Hospital Director	1	1 ^b	3
	Department head	11	11	14
	Section manager	38	38	52
	Supervisor	48	48	100

^aThe total number of executive officers and associate executive officers is seven (7), therefore the actual percentage of respondents from this level of management is 29%. ^bThe actual number of hospital directors is four (4), therefore the actual percentage obtained from this managerial level is 25%.

Results of this study show that almost all staff have access to computers and internet at home and at work. 94% (n=480) of the staff sample reported that they have access to computer with internet connection at home. In addition, the vast majority of staff (n=472, 92.9%) have access to the internet at work.

This research was guided by 6 research questions to determine the overall readiness of the organization. Findings related the research questions are described below.

Q1. What are the learners’ strengths related to their readiness for online education?

By analyzing the six dimensions of the questionnaire that represented the readiness of the staff for online education, all of the staff responded positively (mean >3) to all dimensions. However, to determine the strengths of the staff, the dimensions with the highest means were analyzed further to identify the variables that represent the staff’s strengths. Means and standard deviations of all dimensions are summarized in Table 2.

Table 2
Staff Strengths to Adopt Online Education

Dimension	N	Mean	SD
Technology access	501	4.34	0.82
Important to your success	498	4.34	0.63
Online skills and relationships	482	4.33	0.63
Online audio and video	497	4.04	0.74
Internet discussion ability	499	3.98	0.73
Motivation	497	3.84	0.84

Dimensions with the highest means were technology access (mean= 4.34) and importance to success (mean= 4.34). Further analysis of these dimensions revealed that the variables with the highest means were “I have access to a computer with an internet connection” (mean= 4.53) and “I feel that prior experiences with online technologies (e.g., email, Internet chat, online readings) are important to my success with online courses” (mean= 4.37).

Q2. What are the learners’ weaknesses related to their readiness for online education?

The two dimensions with the lowest means were motivation (mean=3.84) and Internet discussion ability (mean=3.98). Further analysis of these dimensions revealed that the variable with the lowest mean was “I think that I would be able to complete my work even when there are distractions in my home (e.g., television, children, and such)” (mean= 3.75). The variable with the lowest mean in the discussion ability dimension was “I think that I would be able to follow along with an online conversation (e.g., Internet chat, instant messenger) while typing” (mean=3.70).

Q3. What are the relationships between selected learners’ demographic variables (occupation, age, gender, nationality, years of experience and educational level) and their online skills and relationships, motivation and internet discussion abilities?

Spearman's correlation was used to find if there was an association between the independent variables (occupation, age, gender, nationality, years of experience and educational level) and the dependent variables (online skills and relationships, motivation and internet discussion ability). Correlational studies between the dependent and independent variables revealed a significantly positive relationship between occupation and Internet discussion ability ($r = 0.095$, $p < 0.05$). In addition, there was a negative significant relationship between gender and motivation ($r = 0.092$, $p < 0.05$). Other variables were not found to have statistically significant correlation at the 0.05 level. Table 3 shows the relationship between the dependent and independent variables.

Table 3

Correlation Between Employees' Demographic Variables and Selected Dimensions

	Online Skills and Relationships	Motivation	Internet Discussion Ability
Occupation	.071	.012	.095*
Age	-.036	.006	-.038
Gender	-.052	-.092*	-.023
Nationality	.013	.017	-.033
Years of experience in current job	.060	.035	.032
Educational level	.075	.003	-.002

* $p < .05$.

Q4. What is the relationship between learners' past experiences with online education and their motivation towards e-learning?

The relationship between employees' past experience with online education and their motivation with online education was analyzed using Spearman's correlation coefficient. The results of the analysis revealed that there was a statistically significant negative relationship between past experience with online education and the level of motivation at the 0.05 level ($r = -0.088$, $p = 0.05$).

Q5. What are the relationships between selected instructors' demographic variables (age, gender, years of teaching experience, and country of graduation) and their attitudes toward using online continuing education?

Spearman’s correlation coefficient was used to analyze the relationship between the independent variables (age, gender, years of teaching experience, and country of graduation) and the dependent variable (attitude towards using online education) (See Table 4).

Nineteen (19) questions on the survey were used to determine the administrators’ and instructors’ attitude towards online education. These questions used a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The mean of each response was calculated and then the overall mean of all means was calculated to determine the overall attitude towards online education. Correlation was then measured between the independent variables (age, gender, years of teaching experience, and country of graduation) and the overall attitude of instructors.

Results of the analysis revealed that there was a statistically significant negative correlation between the instructors’ age and their attitude towards online education ($r = -0.261$, $p = 0.037$). Other variables (gender, experience and country of graduation) did not show a statistically significant relationship with the dependent variable (overall attitude) at the 0.05 level.

Table 4

Relationship Between Instructors’ Demographic Variables and Their Attitude Towards Online Education

	Overall attitude
Age	-.261*
Gender	-.172
Experience in current job	-.093
Country of graduation	.015

* $p < .05$.

Q6. What are the attitudes of the administration toward the provision of online continuing education?

Descriptive analysis was used to examine the attitudes of the administration to online education. Since the survey had a mix of positive and negative questions, responses to negative questions were re-coded where “strongly disagree” (1) was changed to “strongly agree” (5), “disagree” (2) was changed to “agree” (4), “agree” (4) was changed to “disagree” (2) and

“strongly agree” (5) was changed to “strongly disagree (1). The recoding was done to adjust for the mean calculation. The overall mean of all items measuring attitude towards online education (19 items) was calculated and used to determine the overall attitude of administrators towards online education. The overall mean of all items was (3.88) which represents a positive attitude towards online education (See Table 5).

Table 5

Administrators Overall Attitude Towards Online Education

	Overall Administrator’s Attitude
N	100
Mean	3.88
SD	0.49

Although the administrators’ overall attitude towards online education was positive, administrators responded negatively to one item (mean <3.0). Administrators responded negatively to the variable “I believe that using web based courses will be as effective as the traditional way of teaching” (n= 99, mean= 2.8) which suggests that most administrators think that online education is not as effective as traditional methods of teaching. On the contrary, administrators belief that “the use of audio-visual materials in web based courses will improve students’ learning” (n = 98, mean = 4.3); “online education will improve the access to continuing education for female employees” (n = 99, mean = 4.3); “distance education via web based courses will provide opportunities for education in collaboration with national and international healthcare institutions” (n = 100, mean = 4.2); “online education is an appropriate medium (method) for transmitting educational courses” (n = 100, mean = 4.2) and “distance education via web based courses will help overcrowded continuing education activities” (n = 98, mean = 4.1).

Summary of the Results

The results found in this study were obtained using descriptive and inferential analysis. Research Questions 1,2 and 6 were analyzed using descriptive analysis while Questions 3,4 and 5 were analyzed using Spearman’s correlation coefficient. The results of analysis related to Questions1 and 2 suggested that the employees’ reported strengths in all dimensions of the survey. However, the dimension with the least strength was motivation. In Question 3, simple

correlation was used to analyze the data. The analysis revealed a significantly positive relationship between occupation and internet discussion ability. In addition, there was a significantly negative relationship between gender of the employees and their motivation towards online education. Spearman's correlation was used to analyze data for Question 4 and the results showed a significant negative relationship between employees' past experience with online education and their motivation to e-learning. In Question 5, the results suggested that there was a negative correlation between the instructors' age and their attitude towards online education. Other demographic variables did not show any significant relationships with the instructors' attitude towards online education. Descriptive analysis was used to determine the administrators' overall attitude towards online education (Question 6). Administrators showed a positive attitude towards the use of online education.

Discussion

Research of attitudes towards online education was conducted in the past in academic organizations in the Middle East region (example, Alharbi, 2002; Sadik, 2007). However, to the best of our knowledge, this is the first research that studies the readiness of healthcare organizations to adopt online education for the purpose of medical and non-medical education in the region.

Since all staff responded positively to all dimensions in the readiness survey, they are assumed to be ready to be part of online education. The survey used six dimensions that were found to determine the readiness for online education. The mean of the staff responses was greater in "access to technology" dimension and to the "importance to my success" dimension. This finding concurs with the results of studies by Hu, Chau, Sheng & Tam (1999) and Gibson, Harris & Colaric (2008) which state that the main factor that influenced physicians to adopt telemedicine was usefulness of the technology. In addition, the results here can be explained by the desire of staff to pursue development at their current jobs using new technologies without the need to leave their jobs and other family responsibilities. This assumption is supported by many studies which suggest that learners in online context are usually adults, working full time and with family commitments (Mihhailova, 2006; Maor & Volet, 2007). The results of this research suggest that the majority of staff are self-directed which indicates that their chance of success in online education is greater (Appana, 2008).

Results of this study found a statistically significant relationship between learners' occupation and their internet discussion abilities. Although physicians reported positively towards the "internet discussion ability" dimension (mean=3.9), the correlation analysis revealed that physicians were found to possess less internet discussion skills than administrative staff. This finding can be explained by the fact that administrative staff spend more time at their offices and do more work with computers while physicians spend less time at their offices. This finding is consistent with Balen and Jewesson (2004) who found that the internet skills of pharmacists in a large Canadian hospital needed upgrading to improve their performance.

The results of this study found a significant relationship between gender and motivation. Although most respondents from both genders responded positively to the motivation variables, female respondents were less motivated than males. This finding contradicts the finding of Aragon & Johnson (2008) which demonstrated that gender was significantly related to completion of online courses where 66% of females completed the course compared to 52% of male students. In addition, this finding contradicts the finding of AlGhamdi (2009) which found that gender of dermatologists in Saudi Arabian Hospitals was not significantly correlated to the use of internet.

The overall responses of staff to questions related to motivation were positive. However, the results of this study concluded that employees with previous online experience were less motivated when compared to those who had no experience with online education. This finding maybe due to poor online courses experienced by staff. In addition, these courses may not have been designed and developed by experts based on scientific theories. This result contradicts the study conducted by Muilenburg & Berge (2005) which found that learners with no previous online experiences had a negative attitude towards online education compared to those with online experience

Our study found that instructors' age was the only variable that has a significant correlation with their attitude towards online education. Although the study showed that the majority of instructors had positive attitude towards implementing online education, older instructors reported the least positive responses compared to younger ones. This finding contradicts the finding of Schifter (2002) who found that age did not affect faculty participation in online education.

This research found that the overall attitude of administrators towards the implementation of online education was positive. This result is consistent with the findings of Alharbi (2002) which demonstrated a positive attitude of the administrators towards implementing online education at Imam Mohammad Ben Saud University in Saudi Arabia.

Implications

Online education is perceived as an efficient method by the majority of this tertiary healthcare organization's staff, administrators and instructors. However, the adoption of new ideas is determined by many factors as suggested by Rogers in Diffusion of Innovation (Sanson-Fisher, 2004).

Rogers stated that organizations will usually adopt new ideas if these ideas have relative advantage to the organization, were compatible with the organizations' culture, were perceived as simple to be understood and utilized, were trialable and that the advantages of these ideas can be observed (Sanson-Fisher, 2004).

This research found that the attitude of administrators and instructors was positive towards the implementation of online education which suggests that online education is seen as an advantageous method of teaching. In addition, employees reported that online education is important to their success (mean=4.34). Therefore, employees also see a relative advantage in implementing online education.

Education in Saudi Arabia is segregated where male students are separated from female students in classrooms at all levels of education (primary, intermediate, secondary and higher education). Online education in Saudi Arabia is seen as an efficient solution that reduces the cost and improves the access to education. Although education in this organization is provided to both male and female staff equally, both genders may see online education as a relevant educational environment that is compatible with their cultural norms. In addition, the provision of online education may be seen as a better solution to overcrowded educational classes. It is, therefore, concluded that the provision of online education at this organization does not conflict with the values and culture of the organization or with the cultural norms of the society.

Only 25% of employees reported that they had online experience in the past while the majority (75%) reported that they had no previous online experience. However, the findings of this study also indicate that the majority of employees have good online skills and relationships (mean=4.33), online audio and video skills (mean=4.04) and internet discussion ability

(mean=3.98). These findings suggest that employees should not perceive online education as a complex experience because they possess the necessary skills that should enable them to use online education without facing major technical problems.

Online education should be tried initially with the administrative staff since they were found to have better internet discussion ability than other professions in this organization. Administrative instructions (such as communication skills, conflict resolution, and facilitation) can be purchased and used here. These courses should be customized to the organizational needs before its use. These instructions should then be evaluated based on the predetermined objectives. The findings of the evaluation can then be assessed to determine the effectiveness of these online training instructions based on the employees' outcomes. It is, therefore, feasible to try to observe the effectiveness of online education at this organization.

Recognition of online education by educational authorities in Saudi Arabia is expected to enhance the overall attitude towards online education. It is also critical that online instructions are designed and implemented using scientific methods by instructional technologists. Since online instruction is a new idea that may be challenged initially at this organization, it is important that the experience is assessed, analyzed, designed, developed, implemented and evaluated by instructional designers to assure optimum construction of each component of the experience.

In conclusion, online education is a new idea that has a great chance of being adopted by this tertiary healthcare organization based on Rogers' diffusion of innovation theory. Online education has a relative advantage for the employees, administrators and instructors. Administrators' and instructors' attitude towards online education is positive and employees were found to have the necessary skills to succeed in online education. Therefore, online education can be utilized in this organization to develop the knowledge and skills of its staff. In addition, online education does not conflict with the values and culture of the organization or its human resources nor with the culture and values of Saudi Arabia. Employees were found to be ready for online education in regard to their technical skills which suggest that they will not perceive online education as a complex experience. Finally, the results of this study found that the majority of employees have access to the internet at home and at work. Therefore, online education can be tried without spending resources on building the infrastructure. The results and

outcomes of online education at this organization can then be observed and evaluated at the work, worker and workplace levels.

References

- AlGhamdi KM. (2009). Professional use of the internet among Saudi Arabian dermatologists: a cross-sectional survey. *BMC Dermatology*, 9(10), 1-7.
- Alharbi, Y. (2002). A study of the barriers and attitudes of faculty and administrators toward implementation of online courses. Ph.D. dissertation, University of Northern Colorado, United States - Colorado. Retrieved August 16, 2008, from Dissertations & Theses: Full Text.(Publication No. AAT 3059974).
- Appana, S. (2008). A review of benefits and limitations of online learning in the context of the student, the instructor, and the tenured faculty. *International Journal on E-Learning*, 7(1), 5-22.
- Aragon, S., & Johnson, E. (2008). Factors influencing completion and noncompletion of community college online courses. *The American Journal of Distance Education*, 22(3), 146. Retrieved December 2, 2009, from Research Library. (Document ID: 1543340031).
- Balen R.M. & Jewesson P.J. (2004). Pharmacist computer skills and needs assessment survey. *Journal of Medical Internet Research*, 6, 1.
- Braido, F., Popov, T., Ansotegui, I., Gayraud, J., Nekam, K., Delgado, J., et al. (2005). Continuing medical education: An international reality. *Allergy*, 60(6), 739-742.
- Cathcart, F. (2008). Enhancing patient care by the professional development of clinical staff: A self-directed educational manual for staff working with parents with advanced cancer. *European Journal of Cancer*, 44, 1618-1619.
- Davis, N., Davis, D. and Bloch, R. (2008)'Continuing medical education: AMEE Education Guide No 35',*Medical Teacher*,30:7,652-666.
- Dee, B. (2008). 2007 Health confidence survey: Rising health care costs are changing the ways Americans use the health care system. *Benefits Quarterly*, 24(1), 66.
- Francis B, Mauriello S, Phillips C, Englehardt S, Grayden S. (2000). Assessment of online continuing dental education in North Carolina. *Journal of Continuing Education in the Health Professions*. 20:76–84.

- Francis, O. (2008). Human resources for global health: Time for action is now. *The Lancet*, 371(9613), 625.
- Gerkin, K. L., Taylor, T. H., & Weatherby, F. M. (2009). The perception of learning and satisfaction of nurses in the online environment. *Journal for Nurses in Staff Development*, 25(1), E8-E13.
- Gibson, S. G., Harris, M. L., & Colaric, S. M. (2008). Technology acceptance in an academic context: Faculty acceptance of online education. *Journal of Education for Business*, 83(6), 355-359.
- Hager, M., Russell, S., & Fletcher, S. (2008). Continuing education in the health professions: Improving healthcare through lifelong learning, *Proceedings of a Conference Sponsored by the Josiah Macy, Jr. Foundation*; 2007 Nov 28 - Dec 1; Bermuda. New York: Josiah Macy, Jr. Foundation; 2008. Retrieved November 22, 2009, from www.josiahmacyfoundation.org
- Hu, P.J., P.Y.K. Chau, O.R.L. Sheng, and K.Y. Tam (1999)"Examining the technology acceptance model using physician acceptance of telemedicine technology" *Journal of Management Information Systems* 16(2), pp.91-112.
- James, J. M., Timothy, G. F., & Thomas, H. L. (2008). Options for slowing the growth of health care costs. *The New England Journal of Medicine*, 358(14), 1509.
- Laffel, G. L., & Berwick, D. M. (1993). Quality health care. *Journal of the American Medical Association*, 270(2), 254.
- Linda, D., & Fiona, C. (2008). Human resources for health in fragile states. *The Lancet*, 371(9613), 626.
- Maor, D., & Volet, S. (2007). Engagement in professional online learning: A situative analysis of media professionals who did not make it. *International Journal on ELearning*, 6(1), 95-117.
- Marks, R. B., Sibley, S. D., & Arbaugh, J. B. (2005). A structural equation model of predictors for effective online learning. *Journal of Management Education*, 29(4), 531-563.
- Mayzer, R., & Dejong, C. (2003). Student satisfaction with distance education in a criminal justice graduate course. *Journal of Criminal Justice Education*, 14(1), 37-54.
- Mihhailova, G. (2006). E-learning as internationalization strategy in higher education; Lecturer's and student's perspective. *Baltic Journal of Management*, 1(3), 270-284.

- Moore, M. G. (1973). Toward a theory of independent learning and teaching. *The Journal of Higher Education*, 44(9), 661-679.
- Moore, M. G., & Anderson, W. G. (December 22, 2004). *Handbook of Distance Education* (1st ed.). Mahwah: Lawrence Erlbaum Associates.
- Muilenburg, L., & Berge, Z. (2005). Student barriers to online learning: A factor analytic study. *Distance Education*, 26(1), 29-48.
- Ryan, P., Lyon, P., Kumar, K., Bell, J., Barnet, S. & Shaw, T. (2007). Online CME: An effective alternative to face-to-face delivery. *Medical Teacher*, 29(8), E251. Retrieved February 12, 2009, from Research Library database. (Document ID: 1418362931).
- Sadik, A. (2007). The readiness of faculty members to develop and implement e-learning: The case of an Egyptian university. *International Journal on ELearning*, 6(3), 433-453. Retrieved November 25, 2009, from Research Library. (Document ID: 1287997431).
- Samuel, K. M. (2002). Extending healthcare's reach. *IEEE Spectrum*, 39(1), 66.
- Sanson-Fisher, R. (2004). Diffusion of innovation theory for clinical change. *Medical Journal of Australia*, 180, 55-56.
- Schifter, C. (2002). Perception differences about participating in distance education. *Online Journal of Distance Learning Administration*, 5(1).
- Stewart, G. (2008). "Continuing professional development for surgeons". *The Surgeon :Journal of the Royal Colleges of Surgeons of Edinburgh and Ireland (1479-666X)*, 6 (5), p. 288.
- Suanpang, P., & Petocz, P. (2006). E-learning in Thailand: An analysis and case study. *International Journal on ELearning*, 5(3), 415-438.
- Watkins, R., Leigh, D., & Triner, D. (2004). Assessing readiness for e-learning. *Performance Improvement Quarterly*, 17(4), 66-79.
- Whitmore, B. (2005). Nursing distance education at the dawn of digital broadcasting: A case study in collaboration. *Journal of Nursing Education*, 44(8).
- William, P. G., & David, F. D. (2008). Universal health insurance: Will it control the cost of U.S. health care? *Perspectives in Biology and Medicine*, 51(2), 285.
- Youngblood, P., Trede, F., & Corpo, S. D. (2001). Facilitating online learning: A descriptive study. *Distance Education*, 22(2), 264-280.

Curriculum Vitae

Adnan Dhafer Alwadie

Work Experience:

- ***Respiratory Care Instructor and Supervisor***
King Fahad Medical City, Riyadh
July, 2005 – present
- ***Respiratory Care Instructor and Supervisor***
Prince Sultan Cardiac Center
1995 – 2005

Other Experiences:

- ***President of the Saudi Students Association at Wayne State University, Detroit, MI., USA***
Wayne State University (2009 – 2010)
Detroit, Michigan, U.S.A.

Education:

- ***PhD***
Wayne State University, Detroit, Michigan, USA (2010)
- ***Online Teaching Certificate***
Wayne State University, Detroit, Michigan, USA (2010)
- ***MHHA (Master's Degree in Health and Hospital Administration).***
King Saud University, Riyadh, Saudi Arabia (June, 2005)
- ***B.S. (Bachelor of Science)***
Boise State University, Boise, Idaho, USA (December 1999)

Professional Credentials:

- ***RRT (Registered Respiratory Therapist)***
The National Board for Respiratory Care, Kansas, USA (June 1996)

Symposia and Workshops:

- ***Neonatal course for general pediatricians.***
King Fahad Medical City, Riyadh (September, 2005)
Speaker
- ***Asthma International Day***
King Fahad Medical City (May 3rd, 2006)
Member of the Scientific & Organizing Committee and workshop coordinator
Speaker and Coordinator
- ***2009 AECT international Convention***
Louisville, Kentucky, USA (October, 2009)
Speaker

Professional membership

- Member of the Saudi Thoracic Society (STS)
- Member of the Saudi Society for Respiratory Care (SSRC)
- Member of the American Association of Respiratory Care (AARC)
- Member of the American Society for Training and Development (ASTD)
- Member of the International Society for Performance Improvement (ISPI)
- Member of the Association for Educational Communication and Technology (AECT)