“Let my laptop lead the way”: A Middle Eastern Study

Bradley Saunders
Zayed University, PO Box 19282
Dubai, United Arab Emirates
Tel: 971-4-2082347
Fax: 971-4-2648681
Bradley_Saunders@zu.ac.ae

Phil Quirke
Abu Dhabi Men’s College
Higher Colleges of Technology, P.O. Box 25035
Abu Dhabi, United Arab Emirates
Tel: 971-2-4048 353
Fax: 971-2-4451571
phil.quirke@hct.ac.ae

ABSTRACT
This paper describes the experiences of both students and faculty in two tertiary institutions in the Middle East: a university for women and a vocational college for men. Both of these institutions have recently made it mandatory for students to purchase a laptop computer. Four factors are identified as crucial when introducing new technological innovations into curricula: culture, gender, infrastructure and support, and faculty. Moreover, specific cultural factors affect Gulf and Islamic students. Gender differences in learning styles are of particular importance given the single-sex school background of all students in this Islamic state. The impact of unexpected technical problems and the need for institutions to develop and implement integrated plans for change are considered particularly important to faculty, who have to cope with a new workload created by the introduction of laptops and an unexpected new learning paradigm.

Keywords
Change management, Implementation of technology, Innovation, Laptops

Introduction
As recently as 1962 there were only twenty schools in the United Arab Emirates (UAE) (ArabNet, 1996), but barely four decades later, the effects of compulsory laptop introduction in two tertiary education institutions are discussed. This is attributed to the Federal Government’s commitment to education, as reflected in the 1985 budget figures with a full 11.4% of the national budget dedicated to education (UAE Ministry of Education Report, 1985).

In the UAE, as in most Gulf States, tertiary education for citizens is supported by the government. Each of the last three decades has seen a major governmental investment in the creation of an institution of higher education. In 1977, with the opening of the UAE University, it became possible for the first time for a UAE citizen to complete his or her full education within the country’s borders (Al-Adhab, 1992). In 1988, the Higher Colleges of Technology (HCT) opened to provide vocational training to all citizens and prepare high school graduates for employment within three years. In 1998, Zayed University opened its doors to provide cutting edge technology-supported degrees to its young women leaving high schools in both the capital, Abu Dhabi and the main commercial city, Dubai. The policies of Zayed University and HCT are guided by the Chancellor, Minister of Higher Education, His Excellency Sheikh Nahayan Mabarak Al Nahayan. His commitment to the latest technology is underlined by his opening speech at the recent international student conference “e-ducation without borders” hosted by ADMC, from 22nd – 24th April, 2001. He said, “Learning is no longer separated from learners by artificial borders” and, “More than ever before, e-learning is becoming a viable alternative.”

As His Excellency Sheikh Zayed, the President of The UAE, has said, “Youth is the real wealth of the nation” (ArabNet, 1996), and this is the reflection of the Islamic belief that education and individual pursuit of knowledge are prerequisites of a successful society. The culture and religion of the UAE play a vital role in the personal, familial and social structure of its people. Thus, a conceptual framework encompassing Islamic religious values and Western career education components is not as surprising as many might think (Al-Adhab, 1992).
The two institutions in this study are different, not because of the university-vocational distinction but because of the male-female distinction. The past educational experiences of Arab males and females and their expectations of the use of their tertiary education differ sharply. In both the purpose and scope sections that follow, these differences will be highlighted and expanded.

**Purpose & Scope**

This paper explores the four major factors to consider when introducing new technological innovations into the curriculum. These are: (1) culture, (2) gender, (3) infrastructure and support, and (4) faculty. If any of these four are ignored, the introduction of technology is likely to be complicated.

The importance of cultural issues cannot be overstressed in the UAE whose population of 2,369,153 includes 1,576,472 non-nationals (CIA, 2000). In this study 100% of the students are UAE citizens, whereas only a handful of the faculty are from the UAE, although both institutions are developing programs for national tertiary teachers (Daniel, 2001). This creates a unique situation in that the faculty’s cultural identity may be diverse and tentative, but the students’ cultural identity is united and very strongly rooted. The faculty, who come from a wide number of countries often living away from their native land for many years, have a culture that is difficult to pinpoint. The concept of a national culture becomes problematic as different cultures increasingly migrate and communicate around the world (Appadurai, 1996). In contrast the students’ culture, including the educational system, is permeated by the tenets of Islam (Qutab, 1980).

In accordance with Islamic teaching, education is only co-educational at the kindergarten level (Al-Adhab, 1992). Hence, the majority of students in the institutions in this study had never been taught by a teacher of the opposite sex. Several recent studies focus on the interesting question of the role of single-sex schooling and its effect on subject choices and levels of confidence in academic and leadership potential in tertiary education (Burgess, 1990; Clarke, 1990; Craig, 1999; Shashaani, 1993).

Gender differences were observed in this study. Male students expected the new technology to offer them quick and easy answers and were quick to help each other in a predominately individual or preferred-pair work approach. Girls were more interested in how they could reach a high quality final product through interactive group work. Gender-based learning differences are detailed in numerous articles (Bromfield et al., 2001; Kirkpatrick & Cuban, 1998; Reinen & Plomp, 1997; Durnell et al., 1995; Severiens & Dam, 1994). Meyer, Dunne and Richardson (1994) have argued that gender differences constitute a potentially important source of variation in student learning which should be explicitly managed by teachers.

Many teachers who had no teaching experience in the Arab world expressed a need to adapt their teaching styles when teaching students of the opposite sex. Female teachers at the male vocational college were aware that there is increased need of using a firmer classroom management style because students asked them to provide solutions more frequently than in the traditional classes. This was because the students attempted to use the laptops to work individually or only with their neighbor, rather than in groups. Male teachers at the women’s university who needed to closely monitor the work of small groups of female students were often inhibited by the physical restrictions of the size of the laptop screens and the cabling layout which required them to lean over their students. This could create a potential violation of a cultural norm against close contact of men and women.

The effect that the introduction of technology has on faculty becomes an additional struggle, which serves to highlight how important it is to appreciate how faculty come to terms with new technology. As Cravener (1998) points out:

> In general, the faculty are already successful at teaching and research. Further, the proposal to a successful professional educator that he or she needs to learn new media for teaching and scholarship implies that the old way was somehow inadequate, insufficient, or not optimal: a potential threat to self concept (p. 1).

This was evident in both case studies since faculty were faced not only with new demands on their knowledge but also with a clear need for time-demanding ongoing professional development in the use of technology. Simultaneously, they had to deal with the students’ expectations of immediate benefit from the use of their recently purchased laptops.
This paper does not claim to be definitive or go beyond the walls of two isolated institutions in the UAE. Clearly further research is required in all of the areas detailed and far beyond them. However, we do believe that the generalisations drawn here are valid beyond the boundaries of this study. Moreover, these cases illustrate the value of interesting cultural factors.

**Gender-based affective factors**

“There are definite differences based on gender with regards to performance and computer-oriented tasks” (Craig, 1999, p. 13). This was to a large extent echoed in the observations of the two authors in this paper although it is argued that these differences were not as pronounced as detailed in the work above.

In the male vocational college, students were eager to use their new laptops immediately in all their courses and expressed their disappointment when this did not happen due to technological factors (slow delivery of wireless ports), space considerations (wired rooms fully booked) or curriculum and material restraints as teachers struggled to prepare on-line tasks for the college intranet. The students viewed the introduction of the laptops as a new resource that would make their learning easier, and this false expectation resulted in a period of disenchantment.

The career choices made by male students in the vocational college over the last year indicate that Emirati men are open to IT based professions. New e-commerce and software engineering programs will be offered from September 2002 due to the number of students requesting these professions. The College of Information Systems in the women’s university receives the lion’s share of students completing their General Education courses and offers two degree programs allowing students the possibility, if they desire, to combine the study of Information Systems with Communications or Business Studies.

Interviews with the male students revealed that they, unlike many of the faculty, believed there were no differences in the way in which they or the women students approached their learning with laptops. They saw individual differences in their own approaches as cultural rather than gender based. They felt that the laptops provided them with more opportunity to access the world outside the confines of the college walls. This was extremely important to them, because men in the Emirati culture have a social responsibility extending throughout their family, friends and acquaintances which gives them little study time once they leave the college. Female students also felt that the laptops provided them with a new window on the world because had their access to the Web not been sanctioned by the University they would not normally have been permitted to benefit from it.

**Cultural factors**

The UAE is a fast developing modern country with the latest technological benefits of the modern age at every corner. Nevertheless, the culture of the UAE is rooted in the tradition and heritage of their Bedouin forefathers and their deeply held Islamic beliefs. These factors play a large role in the daily life of the modern Emirati student and, in the opinions of the students themselves, enhance their openness to new ways of learning. The secondary schooling system remains very traditional with teacher-led classes. Secondary education emphasises rote learning and memorisation. Therefore, despite great progress in the last few years, many tertiary students enter university and college with a need for improved critical thinking skills (Daniel, 2001). The introduction of laptops has accelerated this development as it creates a new learning paradigm based on more student responsibility and more emphasis on research skills and project work supported by alternative modes of assessment. In the beginning, students struggled as they were guided how to find answers to their own questions rather than being provided with an all-knowing teacher.

Most of the students felt that the cultural factors mentioned above had little or no effect on how they learnt, because they saw the secondary schooling system as an educational factor and not a cultural one. A number of students said that the only possible cultural factor was that their upbringing and beliefs gave them a thirst for anything new. Other students thought that the main cultural factors at play in the country were in fact expatriate-based and had little or no effect upon the introduction of laptops into their institution or their learning.

**Infrastructure and support**

As Schofield (1995) points out:
... the use of technology is likely to bring with it a surrounding envelope of change that is often an ad hoc response to the practical and logistical imperatives of the situation, rather than a carefully thought out integrated plan for change (p.226).

In both institutions, the frenetic pace of development made such a plan very difficult to formulate. At the women’s university, Information Support installed over a thousand network sockets in a very short period of time to produce a truly enviable technology-rich learning environment. Later, faculty expressed concern about the restrictions of free movement in the classrooms caused by the positioning of the sockets and the pedagogical problems this caused. Training and orientation programs were created by information support personnel and focused on the incremental learning of a number of discrete skills within a specific software application. The relevance of such programs was largely lost, because faculty expressed a desire to receive a holistic approach emphasising the advantages of technology to enhance teaching and learning. Faculty were loathe to risk negatively affecting their job appraisal ratings due to a technical mishap during observed lessons and reverted to familiar classroom approaches to survive the ordeal.

In the male vocational college, which is currently in the process of moving to wireless technology, the faculty were frustrated by technical difficulties. Hours were spent preparing classes which then might be scrapped as servers failed or laptops crashed. Customary technical faults became major concerns and have led to plans for a significant increase of bandwidth and server strength. Clearly, such technical considerations play a major role in the success or failure of the technology-rich learning environment. “…if either the IT infrastructure (including the software used to implement the on-line course resources) or technical support is lacking, these resources will not be well made use of…” (Benson Soong et al., 2001).

Faculty affective factors

The faculty affective factors were seen by all concerned as the most important factor of the four, because they believed that if they were not considered, the planning required would be faulty. The authors noticed that the introduction did, as stated above, involve the movement of the curriculum into a new learning paradigm that placed more responsibility on the students. This shift requires a similar shift in the teaching and learning approaches followed by the faculty. Such a change is never easy to manage and must be carefully planned. “For many, it takes time, practice, support and the building up of experience to make the shift from teacher centred learning to a more interactive student centred approach” (Crock & Andrews, 1997, p. 2).

Faculty, even without technological glitches, often felt unable to derive maximum benefit from the resources at their disposal. Many expressed a lack of time in which they could come to terms with the demands of professional development. For many faculty at the women’s university, they had just started teaching in a brand new institution, in a region where they had never worked. One faculty member said: “Simply surviving from lesson to lesson is enough of a challenge without learning to use the technology”. With enough time, however, as technophile teachers began to make more and more materials and approaches available on the Intranet, teachers who had been less receptive to the use of technology began to implement it more. The familiarity of the browser interface proved to be a significant factor in alleviating teachers’ reluctance to explore the software. In order to exploit the ease of use and couple it with administrative and collaborative enhancements, both institutions adopted Intranet-based GroupWare solutions: the women’s university adopting Blackboard and the men’s college adopting WebCT. Development teams at both institutions have begun the task of transferring all courses to these electronic delivery systems.

The extra work for faculty caused by the introduction of laptops was seen as both a benefit and a problem. The benefit for teachers and students cannot be overstated as the teacher can work with slower students while faster students can go ahead. “The laptops have allowed students to work at their own learning pace and allowed me the time needed for the slower learners.” In some situations, however, teachers found it difficult to persuade students to tear themselves away from their laptops long enough to pay attention to teachers’ lectures or to group discussions. “One day a week I insist that they close their laptops and open their ears.”

Conclusion

This paper has aimed to give the reader a glimpse into the situations of two tertiary educational institutes in the UAE, which have begun to deliver their programmes through laptops. It is suggested that cultural, gender, infrastructure and support, and faculty affective factors should be considered when planning this introduction of
new technology. Whilst the cultural factors may not affect the programme greatly, it is believed that planners should be aware of these factors. The experiences gleaned from this study support the view that computer-based study is more effective when delivered to single-sex classes in this cultural setting. It is suggested that a clear infrastructure and strong institutional support is required to ease the extra faculty workload brought about by the implementation of laptops and the concomitant shift in learning paradigm. Finally, planners must take into consideration the faculty affective factors if any such program is to be introduced successfully.

References


