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# The Value of e-Learning in the Palestinian Medical School

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## Abstract

*The Palestinian Medical School was established in 1994 on the Abu Dies campus of Al Quds University. In the first four years access to the campus and associated teaching hospitals was relatively easy. The first cohort of doctors graduated in 2001 and since then about 220 have qualified from the Al Quds Faculty of Medicine. Now however, physical barriers such as the Apartheid Wall have made movement of students, patients and teaching faculty to the different learning stations almost impossible in the West Bank and absolutely impossible to and from Gaza. To overcome those geographical barriers, we now have three university campuses (Abu Dies, Nablus, and Gaza) and many hospitals (Khan Younis, Gaza City, Hebron, Ramallah, Nablus, Bethlehem and Jerusalem) interconnected by video conferencing facilities and e-learning conduits. We have adopted a blended learning approach whereby face-to-face bedside experience is supplemented by video conferences, tele medicine and self-learning resources available by internet or webcast vehicles such as MOODLE. There are difficulties yet to be overcome but we believe that e-learning is valuable not just for training doctors at undergraduate and postgraduate levels but too for nurses and all other healthcare workers.*

## Introduction

### ***Electronic Learning as a Modality in Medical Education***

Access to knowledge and information through the Internet has spawned a world of electronic learning (e-learning); stimulating a new passion for lifelong learning in academia, professional environments, the workplace, and at home. Indeed, e-learning has provided new ways of thinking about how people learn with technology and also how new learning opportunities are offered by new technology. These perspectives highlight the importance of developing connections between a wide variety of learning resources, containing both codified and tacit knowledge. In medical education, e-learning is expanding to include not only educational computer programs to create and simulate virtual patients with a wide variety of medical conditions in different clinical settings, but also distance learning in developed and developing countries to globalise medical education providing equal opportunities for health professionals all over the world (Beux and Fieschi, 2007).

With regard to health professionals, e-learning has been viewed as a well-accepted and practical learning method in healthcare (Autti et al., 2007). Moreover, medical education has recently witnessed an accelerated and worldwide trend of change,

especially as far as curricula are concerned. In fact, in the last two decades, there has been a great deal of interest in educational strategies including the development of concepts such as "problem-based learning", "student-centred learning", and "integrated teaching" (Al Shehri, 2003). These developments have resulted in a change in approach from the assumption that any good medical practitioner has the ability to teach to the realisation that professional training of teachers is required. This has also been accompanied by the emergence of e-learning courses as an appropriate tool to improve knowledge of health professionals, including physicians and medical students in a wide range of topics such as surgery (Ridgway et al., 2007), radiology (Sparacia et al., 2007), geriatric medicine (Ruiz et al., 2007), emergency medicine (Smolle et al., 2007), rheumatology (Wilson et al., 2006), and genetics of epilepsy (Wehrs et al., 2007).

### ***The Palestinian Medical School and the Rationale Behind the e-learning Project***

Healthcare in Palestine has been served historically by dependence on the British system during the Mandate and the medical

education systems largely based on the British model in Jordan, Egypt and Iraq. Upon this matrix was superimposed additional education in the Soviet-bloc and the return of young doctors to Palestine often but not always trained to low standards. Since the collapse of the Soviet Union and the first intifadah, it has become evident that Palestine should develop its own structures based on and dedicated to its own special needs.

The opening of nurses training colleges, dental schools and public health centres, as well as in 1994 the first Palestinian Medical School in Al Quds University, has resulted in far less dependence on outside agencies. However, if we take the Medical School as one outcome and analyse its successes and failures, there is much needing to be done. The original aims and objectives of the School were clearly stated as being to: (1) produce competent doctors committed to the service of the Palestinian community; (2) improve quality of healthcare throughout that community; (3) provide and lead opportunities in continuing medical education (CME) and encourage research.

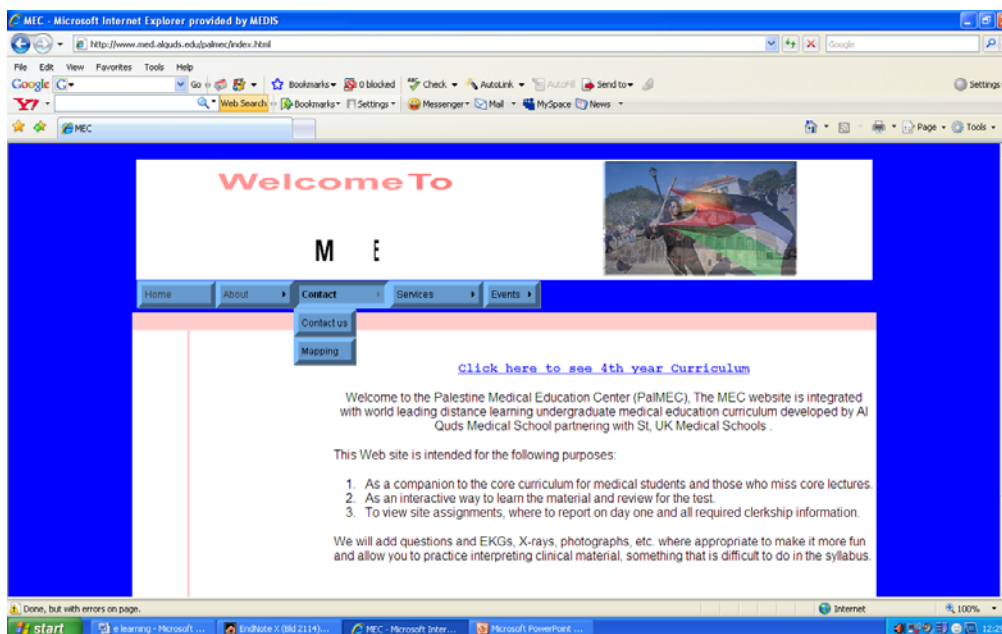


Figure 1.1: The Medical Education Centre Home Page. You can visit on the following web address:  
<http://www.med.alquds.edu/palmec/index.html>

The fact that seven cohorts of high quality doctors have graduated since 2001 pays ample tribute to the first objective being attained. However, many analysts suggest that the School has been less successful in the other three objectives. After a decade in existence, the School has had minimal influence or impact on the community, in lifting the quality of health care, in postgraduate medical education or in the development of CME. Research is at a standstill.

The experience of students in the Medical School is typical of those in other colleges. For the first 6 years, it was relatively easy for students to travel to the Abu Dies campus, although students from Gaza had to leave home for the length of the course and not see their families for lengthy periods. The first group of doctors graduated in 2001 having started out in 1994 from homes from all over the West Bank and Gaza. Pre-clinical teaching was concentrated on the Abu Dies campus and students circulated through various hospitals for their clinical training, most particularly Jerusalem, Hebron, Ramallah and Nablus. Access to patients was reasonable and the students were exposed to a reasonable spectrum of disease conditions.

However, from 2000 when the second intifadah started, Israeli restrictions have completely altered the learning experience. Indeed, the construction of the Apartheid Wall is affecting the educational process by adding a lot of obstacles; not only has the Medical School lost precious teaching Faculty but huge time delays and blockades restrict access to learning at both pre-clinical and clinical levels. Neither teachers nor students can move easily, travel is unpredictable and costly, and clinical teaching is severely hampered by lack of patients, particularly in

the Jerusalem hospitals. Gaza has become totally inaccessible to external visitors. Nablus is frequently besieged by Israeli Occupation Forces and the Apartheid Wall has effectively shut down access into Abu Dies by Jerusalem based staff or students. Predictably, this has resulted in separate campuses evolving from 2002 to 2007 in Gaza (Al Azhar University) and in Nablus (An Najaah University).

It is to address all these concerns and issues, that we have set up the Medical Education Centre in the Al Quds Faculty of Medicine.

### ***Project aims and objectives***

The overall mission of the Medical Education Centre is to provide high level professional education services to support and enhance the learning capacity of all involved in health science education and service delivery. In doing so, it will undertake research and development to pioneer and exploit all modalities of the IT revolution including video-conferencing, telemedicine, website learning and internet connections and vehicles such as MOODLE, aspiring to establish an international reputation as a centre of excellence, eventually to have a major impact on patient care in Palestine. In addition, we aim to promote communication, both at the national and international levels, of prehospital and clinical education collaboratively between students and teachers from the three campuses and from all over the word. In this regard, this project will require students and teachers to engage in a series of face to face lectures, which have been reinforced through distance education strategies, such as online learning.

### **Methods**

#### ***Establishment of 6 centres for video conferencing***

In the light of the desperate need for a modality of medical education that maintains communication between teachers from the three main Medical Faculty campuses with their students, six videoconferencing centres have been established, collectively under the umbrella of the first Palestinian Medical Education Centre (PMEC). While the main centre is on the central campus in the School of Medicine at Al Quds University (Abu Dies), the others are established in Gaza (Gaza City, Khan Younis) Nablus, Ramallah and Hebron. While each centre is run locally by experts, they are coordinated by the main office of the PMEC at Abu Dies.

In short we have focused mostly on: (1) providing learning, educational and continuous training resources which transcend factional interests and physical or geographical barriers to access; (2) creating new learning tools for undergraduates, postgraduates and for continuous medical education for all healthcare professions; and (3) pioneering new methods and learning resources in a cost effective and readily accessible way (eg. website, Moodle, Internet 2) so that they are of particular value to economically deprived students.

We are also keen to develop this facility in such a way that it brings together education of all concerned in health provision in a multidisciplinary learning programme and raises awareness at an international level of health, population growth and potential future epidemic issues which will make medical education in Palestine a community based system.

#### ***Use of e-learning in the delivery of some courses***

E-learning has been in use as a modality of medical education at the School of Medicine in Abu Dies-Jerusalem over the last three years. The main objectives over this short

period of time have been: (a) self learning on multi-media resources; (b) meetings with teachers for questions-answers sessions; and (c) tutorials animated by older students. These objectives were met in the teaching of at least three independent courses; neurology, pathology and medical ethics. Our initial feedback from participants involved in the three courses revealed that teaching using this modality satisfies both the students, as well as the teachers.

In the pathology course, practical training classes are extremely important to gain knowledge and become competent in the use of the microscope at looking at slides. In the present laboratories, however, tutors have less time for teaching their juniors because of increased student numbers and insufficient teaching materials. To supplement practical training of students, we therefore decided to employ clinical simulation teaching materials using a computer assisted education system. First, a series of e-learning course-ware on systemic pathology were created.

The pictures were arranged with questions, answers and commentaries, uploaded to the server in our university, and offered to the students. This system has been received with a high rate of student satisfaction.

We have used distant learning to successfully deliver a complete course of medical embryology over the last two years. This course was given by a visiting professor from the University of Oxford to a group of 30 second-year-medical students in Gaza and 40 students in Nablus concurrently.. Although this course was not meant to be a substitution to in-person lectures, it has been viewed by the participants to be of great help as supplementary material and to chart a guiding track for the students in the two sites for further study thus compensating for the lack of personal lectures and surmounting the problematic accessibility issue.

Similarly, and due to the lack of neurology specialists in Palestine, a group of neurologists from the University of Southampton and Kings College University has been visiting the Medical School over the past 4 years. This group of consultants were visiting for a short period of time and again had no accessibility to Gaza; distant learning was the only method to deliver the core lectures in neurology for 4th year medical students there. Not only the theoretical part of the course, but also the practical part was covered in which tutors successfully managed to deliver some in-class clinical demonstrations on real patients.

***Staff members have been using e-learning to interact with each other and to maintain communication at the international level.***

The success of any e-learning project in medical education depends partly on the educational skills of its teaching staff and on student commitment. As most of them will have received no formal training in this role, a well conceived and acceptable educational staff development programme will be a vital part of the Centre's role. In this regard, the Al Quds School of Medicine has organised training courses on e- and distant learning in situ as well as in London for members of staff.

From this perspective, and as part of the training on the use of IT, distant learning has been used as a modality through which members of staff from the three main campuses maintained some level of communication. Taking in consideration the difficulty in travelling from one place to the other in Palestine and the short period of time that clinical tutors can usually devote to meetings, this system has been successful in formulating staff interactions and contributing to their academic experience as well as in curriculum innovation.

In addition, this system has been of great help in interviewing candidates selected for postgraduate training in various specialties. For instance, we needed to interview the short listed candidates for a training course in neurology. However, with all the restrictions on movement/transportation and the different sorts of closures we have in Palestine, it was extremely difficult to arrange for the interview panel to meet at one site and it was impossible to interview candidates from remote areas under complete siege, such as Gaza. Using the videoconferencing technology, we managed to maintain a good level of communication between the interviewers themselves and candidates being interviewed. This was enjoyed by all participants and was described as a cost-effective modality.

***Distant Education: medical students' interactions with other students at the international level***

Another feature of e-learning liked by the students is the interaction and the communication with students from other medical schools in the United Kingdom and Canada. This holds particularly in medical education, where the development of attitudes, interpersonal skills, and skills at solving common world health problems, are important goals for the education of health professionals. In this regard, the School of Medicine and the student body worked together to arrange videoconferencing meetings and lectures with experts in the medical fields from UK and Canada. For the future, the British Council in East Jerusalem has offered to facilitate 12 international one day seminars in the next 12 months to cover specialist topics such as medical ethics.

## **Discussion**

***Value of this modality of teaching***

As e-learning is proving to be an effective and enjoyable strategy in achieving standard learning outcomes, it is desirable to establish a Medical Education Centre that organizes the different ongoing activities, collects reviewed high quality e-learning materials and maintains nationwide as well as international educators' communication. This system, if used judiciously, will help the Palestinian Medical School to strengthen its academic resources and student development.

In the literature, there has been a considerable debate about whether e-learning is better than classical methods of teaching (Grigg and Stephens, 1998; Schitteck et al., 2001). While it has been shown that computer-aided learning (CAL) is just as successful as traditional methods of teaching, e-learning has more recently been revealed to offer advantages over classical methods of teaching in medical education, as it allows students to work in their own time and space and at their own pace (Gupta et al., 2004). In agreement, it has further been shown that students performed better with CAL compared to classical lectures (Williams et al., 2001). However, the present consensus is that CAL can be used in medical education only as a supplement rather than a replacement to traditional lectures. This is mainly because e-learning may not suit all the students (Schitteck et al., 2001).

In the unique case of Palestine, with the lack of human resources in many different medical specialties, the restrictions on movement from place to place, and the inaccessibility to the majority of the students to their allocated

clinical sites (particularly in Jerusalem), the use of e-learning in medical education has become a necessity. In fact, although this modality has been recently introduced to the medical teaching system, it has been demonstrated as a very useful tool to overcome the different difficulties that usually limit success in the delivery of high standard medical education and clinical training. Indeed, using e-learning and videoconferencing technology, we have managed to deliver courses both in basic medical sciences and clinical training for those students who have been banned from it by the closure. This has ensured that the students at the three main campuses have received the core lectures indicated by the School curriculum, so providing more or less equal opportunities for all the students at the three sites.

However, e-learning introduces new demands that impel reviewers to consider aspects that are unique to educational technology, including pedagogy, format, usability, navigation, interactivity, delivery, ease of updating, distribution, and access. In Palestine, the lack of proper connectivity by local telecom companies, and technical expertise to deal with mishaps as they arise are issues of major importance. As a result of all these difficulties, scheduling efforts are not always perfect. For example ISDN lines provide excellent images and sound for videoconferencing if 6-8 are connected but are poor in the 2-4 range. Internet connections are often slow compared with Israel and the developed world.

## **Conclusions**

We are absolutely convinced that e-learning and distant learning are essential tools for medical education in Palestine. Young people here are computer literate and enjoy networking both within the Occupied

Territories and the outside world. Our first two years developing IT tools have faced technical difficulties which we hope are soluble but even so user satisfaction has been excellent.

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