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Translation, Implementation and Evaluation of a Medical Informatics Distance Learning Course for Latin America

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Abstract

There is a growing need and interest worldwide for healthcare professionals trained in medical informatics. Distance learning technologies are increasingly used to deliver such education, but mainly limited to the English language. We describe the implementation of a medical informatics course delivered in Spanish for a Latin American audience. The course was based on the 10x10 program of the American Medical Informatics Association and Oregon Health & Science University and translated and adapted to the Latin American setting. The course consisted of ten one-week units. A total of 152 individuals enrolled in the course, 93% of whom completed it. Most of the students were healthcare professionals and the largest proportion was from Argentina. Student satisfaction with all aspects of the course was high. The initial experience obtained in training healthcare professionals in medical informatics in Latin America in their own language demonstrated that it can be used across the region, and this could represent a model for disseminating knowledge of medical informatics across other languages and cultures.

Keywords:

medical informatics/education, distance learning/ methodology, teaching

Introduction

There is a growing need to train individuals in medical Informatics (MI), the field concerned with the capture, management and use of information in health and biomedicine [1, 2].

International programs using distance learning to deliver MI education have been developed in the United States, New Zealand and Europe. In Latin America, an international program has been developed in Brazil but is delivered by means of in-person training sessions and is not on-line. Latin America is a wide and diverse region, making the delivery of in-person training programs a difficult task. Distance learning programs provided by Internet tools, may be a possible strategy to deliver MI education.

In 2005, the American Medical Informatics Association (AMIA) and the Department of Medical Informatics & Clinical Epidemiology of Oregon Health & Science University (OHSU) launched the 10x10 Program [3].

In order to develop a training program in MI that was more locally focused and delivered in the Spanish language, the MI task force of the Hospital Italiano at Buenos Aires (HIBA) entered into an agreement with OHSU to translate and adapt the OHSU 10x10 course to the Latin American region. This paper reports the experience of adapting, translating, implementing, and evaluating our effort.

Materials and methods

The goal of the course was similar to the English version in giving participants the tools for the development of solutions to specific healthcare problems using informatics principles. Moreover, at the end of the course, the participants would develop the necessary skills to implement healthcare information projects in their own workplace.

The course adhered to roughly the same outline as the English version from OHSU, covering the following main topic areas: Overview of the discipline; Biomedical Informatics; Electronic Health Records; Decision Support and Health Care Quality; MI Standards: Privacy, Confidentiality and Security; Information Retrieval and Digital Libraries; Multimedia and Telemedicine; Organization and management issues in biomedical informatics; Biomedical Informatics Subspecialties; and Information Systems in Public Health.

The teaching modalities used for the course included lectures, threaded discussion boards, recommended readings, and self-assessment.

Two surveys were administered to determine the students` opinions regarding aspects of the course: one related to the format – voice-over-Power Point vs. reading material – and the other assessed their perceptions of other aspects of the course.

Results

The course was launched in March 2006 with 152 registered students. A total of 142 (93%) of them completed the course. The overwhelming majority of students were physicians (104/152).

Most students were from Argentina (128/152), although others came from a number of different Latin American countries and Spain.

The "lecture" portions of the classes were available in two different formats. The first provided reading material on the screen and for printing, while the second consisted of voice-over-Power Point presentations.

The students needed an Internet connection to enter the virtual campus to access the course. The content was designed so that even dial-up connection could be used. The material was published in HTML or PDF, with the audio-visual material was delivered via Flash format.. Students were asked about the quality of the content using a Likert scale (1 worst to 10 best). The reading material obtained an average score of 8.5, whereas the voice-over-Power Point format obtained an average of 7.6. The combination of both formats obtained an average of 8.6

At the end of the course, students were asked about the course characteristics, the interaction with the teachers, the modality of e-learning and the main features of the course using a Likert scale (1 worst to 5 best). The whole course was scored with 4.2, the score regarding the e-learning part of the course was 4,3 and when the student were asked if they would recommend this course to their colleagues the score was 4.3.

Students were also asked how they planned to use the knowledge obtained from the course. About 42% answered that the course was preliminary training for an electronic health record implementation, 17,5% said the course taught them how to use the electronic health record, and 7% answered that the course trained them on how to assume a new role such as Chief of Medical Informatics in their institution

Discussion

MI training has been developed mainly in the USA [4] and Europe [5]. Most of these programs are taught in-person only, and the number of Spanish language courses available is limited. Most of the material related to MI training – text books, bibliography, etc. – is published in English, which provides a barrier to Spanish-speaking students. Furthermore, most of these courses do not take into account specific regional needs (e.g., American courses devote time to topics of less detailed interest in Latin America, such as the Health Insurance Portability and Accountability Act, HIPAA).

We therefore not only had to translate the course, but also add information and examples describing healthcare that was applicable to the region. We also had to create a handbook in Spanish language to explain the course materials that contained 750 pages and was rated highly by students.

When selecting the topics for the Spanish version of the course, we decided to exclude certain units, as "Evidence-based Medicine" or "MI Professional Development in the USA". We added some other topics that were relevant to our educational needs, such as "Use of Controlled Vocabulary and Terminology Services", "Digital Signature", and "Law on Privacy, Confidentiality.". We also added additional material on "Picture Archive and Communication Systems" (PACS) in radiology and "Biological Signal Processing in MI." We also broadened coverage of the impact of MI on public health, focusing on epidemiological surveillance, immunization records, and geographic information systems.

We have demonstrated that MI education can be provided in Latin America via distance learning. This kind of training was received positively by students. Future efforts will focus on improving the course and offering to a wider audience, particularly as MI applications become more prevalent in the region.

References

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