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The Web-based Learning Environments Affect the Learning Outcomes: Website Design for the International Journal of Medicine

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Abstract

This project is to describe the development and preliminary evaluation of a website design for the International Journal of Medicine (IJM), and to evaluate if the attitude and learning experience of using information technology would be more positive in the web-based learning environment. The International Journal of Medicine (IJM) is a peer-reviewed, refereed Journal with distribution in more than 200 countries and territories. The journal website was designed to help healthcare professionals and students in their daily practice, lifelong learning and career development. Consequently, there would be a website in a designed learning environment with special learning and communication tools when using the Internet for medical education and practice purposes. Information technology (IT) is there to be used and website and electronic communication provide competitive advantage. Properly planned, designed and implemented website should pay for itself and providing a return on investment. Website provides convenience to the healthcare professionals and students and offers them the ability to communicate more effectively in medical practice and education.

Keywords:

web-based learning, healthcare professionals, medical student, information technology, website design

Introduction

To describe the development and preliminary evaluation of a website design for the International Journal of Medicine (IJM), which can be used by all healthcare professionals and medical students in the field of medical practice and education worldwide to access healthcare information to enhance evidence-based patient care and personal professional development and to evaluate if the attitude and learning experience of using information technology would be more positive in the web-based learning environment, in which the healthcare professionals and medical students could use information technology based learning tools.

Design and methods

The International Journal of Medicine (IJM) is a peer-reviewed, refereed Journal with distribution in more than 200 countries and territories. The journal website was designed to help healthcare professionals and students in their daily practice, lifelong learning and career development. In addition, it seeks to be at the forefront of the international debate on health. The Journal website was designed by the Editor in Chief, Professor Comfort Osonnaya in collaboration of the Editorial and Production Team of the Journal and in collaboration with the various organisations linked to the Journal. These include: the Association of Health Care Professionals (AHCP), the owners of the Journal, the International Medical Publishing Group (IMPG), the publisher of the Journal, the Lowcost Services Group (LSG), the typesetting, production, distribution, administrative and website coordinating Managers of the Journal.

All production, editing, review, commissioning, legal and ethical issues, details of Editorial Board Members and other relevant information and links were included in the website.

Infotex Internet Providers of Sussex, UK were commissioned to host the website and members of the Editorial and Production Team have been working closely with them on the website design.

It was agreed that a complete book, which contains all the information on the website will be published by the Journal Publishers, in order to act as a reference for the production. It was also agreed that the website would have a link to the AHCP, IMPG, PHCJ and other related websites, which are also being updated. The timescale agreed for the IJM and other linked website to go live is between September to December 2006.

The website design team agreed that the initial designed website would be tested and first evaluated by the Editorial and Production Team, together with a small sample of other potential users of the website (healthcare professionals and members of the public). The manuscript of the website book would also be available at the IJM Editorial Board Meeting for further comments from the Editorial

Board Members. The summary of the results of the initial evaluation of the website are stated below.

Results:

The web-based learning environments affect the learning outcomes differently according to the pedagogy (traditional instruction versus constructive), the design of website (linear versus hypertext), and the interaction possibilities provided by the learning platforms (interaction only with the learning materials versus interaction with peer review and the instructor). Consequently, there would be a website in a designed learning environment with special learning and communication tools when using the Internet for medical education and practice purposes. The majority of the respondents indicated that the website met the users' requirements to a very good extent and the website promotes efficient information delivery to the healthcare professionals and students in research, medical practice and education.

Discussion:

The study had a pre-/post-text control group design. The different learning styles for healthcare professionals and medical students can be generated in the following:

- a didactic style where texts and tutorials were offered in a structured way
- a problem-solving style, where the material was presented in the context of the case and the computer asked appropriate questions in a series of multiple-choice tests,
- a free text style, which allowed the user to respond to open-ended questions by typing in natural language responses.

The website environment was designed for healthcare professionals and medical students in two different forms:

- Journal materials offered through conventional www-technology and by engaging in an e-mail discussion with an instructor for a non-interactive web-based learning, and
- Journal materials offered using the web-based learning for self-direct learning as well as interactive forums with an instructor and peer review for a shared learning process.

The advantages of the website include[1-3]:

- being available 24 hours a day, seven days a week
- it is convenient to browse the website and check the information whenever they want
- the website can also allow students and healthcare professionals to collect information and allows them to sign up and order journals and related products and services
- the need for administration is reduced
- an on-line website which is quick, easy and inexpensive to modify
- providing answers to frequently asked questions thus saving staff time
- improved communication by email which is professional and convenient
- it is significantly better than leaving messages on answering machines

Conclusion:

The more interactive computer-learning environment improved learning outcomes. Information technology (IT) is there to be used and website and electronic communication provide competitive advantage. Properly planned, designed and implemented website should pay for itself and providing a return on investment. Website provides convenience to the healthcare professionals and students and offers them the ability to communicate more effectively in medical practice and education.

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