



Evidence Summary

Despite Barriers, Education Providers, Health Professionals, and Students Perceive E-Learning to Be an Effective Method of Education

A review of:

Childs, Sue, Elizabeth Blenkinsopp, Amanda Hall, and Graham Walton. "Effective E-Learning for Health Professionals and Students—Barriers and Their Solutions. A Systematic Review of the Literature—Findings from the HeXL Project." Health Information & Libraries Journal 22.S2 (2005): 20-32.

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Abstract

Objective – To determine barriers or problems and possible solutions related to e-learning, and to determine the effectiveness of e-learning among health professionals and students.

Design – Systematic review of qualitative literature, in addition to interviews and questionnaires, to allow for triangulation of the data.

Setting – "The HeXL Project: Surmounting the Barriers to NHS E-Learning in the North-East." The National Health Service (NHS) in the North-East of England, from May 2003 to March 2004.

Subjects – A systematic review of 57 qualitative studies on health and e-learning, phone interviews with 13 managers and trainers, and 149 questionnaires completed by users and non-users of e-learning. All participants of the interviews and questionnaires were staff and students of the NHS in the North-East of England.

Methods – The study used three methods to collect data to meet the objectives of the study. For the systematic review, the databases AMED (Allied and Alternative Medicine), ASSIA (Applied Social Sciences), CINAHL (Nursing and Allied Health), ERIC (Education), HMIC (health Management), LISA (Library and Information Sciences), PubMed (Medline), and Web of Science were searched using the terms "e-learning"

or “computer assisted instruction”, and “health”, and “barriers.” Any type of research or comprehensive literature review was selected from the results to be included in analysis. Based on the findings from the systematic review, a semi-structured interview schedule was developed for use in phone interviews to be conducted with managers or e-learning trainers. Also based on the systematic review, questionnaires were developed and distributed to users and non-users of e-learning. The three methods permitted triangulation of the data.

Main results – The search produced 161 results of which 57 met the methodological criteria. The 57 studies categorized e-learning barriers and solutions into eight different issues: organizational, economics, hardware, software, support, pedagogical, psychological, and skills. Results from the interviews and questionnaires mirrored those of the systematic review. Barriers to e-learning included managing change, lack of skills, costs, absence of face-to-face learning, and time commitment. Solutions to the barriers of e-learning included blended learning, better design, skills training, removal of costs, and improved access to technology. There were, however, some discrepancies between the results from the systematic review and the interviews and questionnaires: barriers due to “lack of access to technology” (29) were not perceived as serious, suggested solutions did not include better communication and scheduling, and the solutions to provide trainer incentives and employment admission criteria were rejected. Users and potential users of e-learning mentioned one solution not found in the review: protected time during work to partake in e-learning. Results from the interviews and questionnaires demonstrated that managers, trainers, and learners thought e-learning to be effective.

Conclusion – The researchers answered the study’s questions to determine the perceived barriers and solutions to e-learning for the NHS in the North-East of England. Despite the barriers identified, it was also determined from the interviews conducted and questionnaires returned that managers, trainers, and learners perceive e-learning as an effective method of education for health professionals and students. Further research is needed to determine whether this perception is correct. The systematic review of the literature identified important “factors which need to be in place” for e-learning to effectively take place (29). The barriers and potential solutions identified are useful for those designing e-learning programs in any professional context. The results point to several requirements for e-learning success: national standards and strategies; curriculum integration; change management; flexible programming; skills training; and support and access to technology for managers, learners, and trainers. The authors of the article believe that librarians play an important role in e-learning and identify several areas in which librarians can contribute.

Commentary

This study employs a systematic review of the literature as one of its methodologies—a method that is considered rigorous when conducted properly. This type of design includes systematic searching of the literature, appraisal of the research, and synthesis of the results. The researchers in this study searched a broad number of health and education databases to collect relevant literature on the topic, however the search strategy (“e-learning” or “computer assisted instruction,” and “health,” and “barriers”) is rather simplistic and excludes many potential near-synonyms. It is unclear to what extent these terms were elaborated upon for the various databases. It is

therefore possible that studies and significant articles may not have been retrieved as a result. The researchers do not make mention of any type of critical appraisal of any of the 57 studies included in the review. Booth argues that “true” critical appraisal normally required for systematic reviews of quantitative research is not required in synthesizing qualitative literature (2001). The researchers of the current study, however, do not address the quality of the studies included in their review, which would have allowed the reader to weigh the importance of the results and identify potential biases. The resulting synthesis of results, while inclusive, may subsequently be distorted or exaggerated.

Systematic reviews are traditionally conducted using experimental studies or at the very least quantitative studies, yet qualitative evidence can and should be included to answer certain types of questions. Qualitative research design provides rich data to support and inform current practice. Currently, there are no validated tools for assisting in the appraisal of qualitative research, although efforts are underway, such as those of the Campbell Collaboration and Dixon-Woods. The questions in this study were best answered by qualitative data, and the researchers made an admirable attempt to conduct a systematic review of the qualitative literature. The addition of other qualitative data gathering techniques to allow for triangulation of the data supports the conclusions drawn from the review and proposes areas for further investigation.

The secondary objective of the study—to determine the effectiveness of e-learning—was not addressed by the systematic review, but by using the two other data collection techniques. The instruments used in the semi-structured phone interviews to e-learning managers and trainers, and in the

questionnaires distributed to users and non-users of e-learning, were well described and were logically based on results from the systematic review. It is not known how many individuals received questionnaires; so it is therefore impossible to know if enough questionnaires were returned to ensure representative results. The fact that the researchers fail to report the number of distributed questionnaires, the elaborated search strategy, and the critical appraisal criteria could jeopardize the validity of the results. Based on the data provided, it is impossible to know if the results are representative of the population of NHS members in the North-East of England, or of other similar environments where health professionals are engaged in large-scale, on-line training and continuing education initiatives.

As the authors report, the results of this study, while not specific to librarianship, are important for librarians and information professionals working in different contexts: those supporting e-learning (or distance education), those involved in the planning and design of e-learning, and those participating in e-learning as students. Most importantly, as the authors point out, librarians can assist with the skills training required by trainers and learners to use the hardware and software required. Librarians may also wish to incorporate information literacy learning objects within e-learning tools. Academic and special librarians may want to ensure links to information resources are present within e-learning modules. The authors correctly assert that it is important for librarians to become involved in e-learning initiatives and that they make their roles in such endeavours evident.

Works Cited

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