Do Medical Students Assess the Credibility of Online or Downloadable Medical Reference Resources?

Colin J. Lumsden, Manchester Medical School, University of Manchester, Manchester, UK
Meera S. Nanda Kumar, Manchester Medical School, University of Manchester, Manchester, UK
Jane S. Mooney, Manchester Medical School, University of Manchester, Manchester, UK
Jo Hart, Manchester Medical School, University of Manchester, Manchester, UK
Fraser MacNicoll, Manchester Medical School, University of Manchester, Manchester, UK
Lucie M. Byrne-Davis, Manchester Medical School, University of Manchester, Manchester, UK

ABSTRACT

This study was designed to elucidate how medical students assess the credibility of online resources and downloadable applications as well as describing trends in resource usage. Methods: 72 students participated in the study and completed an e-questionnaire. This was based on a framework by Kapoun which summarises steps that users of online resources should take to ensure credibility using key domains: accuracy, authority, objectivity (where the reader questions the provenance of the material), currency and coverage (questioning appearance, reliability and accessibility of a document). Results: There were variations in the reported use of parameters of credibility with objectivity and currency being the most widely used credibility measures. The study group were significantly influenced by the cost of resources using free resources if possible. Responses revealed that most of the study group were using open-access sites over commercially-based peer review resources. Conclusion: The widespread availability of m-technology has increased the accessibility of online medical resources. Medical schools should review what information is provided to students and consider equipping students with the skills to successfully evaluate resource credibility as part of their core curricula.

Keywords: Credibility Frameworks, Digital Literacy, Medical Reference Resources, Mobile Technology, Resource Accuracy

DOI: 10.4018/IJDLDC.2015010102
INTRODUCTION

Medical reference resources have changed significantly within the past decade. Whilst the content itself may continue its natural evolution as new knowledge becomes available the access to that knowledge has been altered through the availability and ubiquity of mobile technology. These devices have changed the learning environment by providing access to a large amount of information not only at fixed geographical locations but at anyplace and at anytime. (Martin & Ertzberger, 2013) This access to large amounts of knowledge on one hand can be seen as an undeniably rich source of information but it also raises concerns about the accuracy of that information and how we decide which resources to trust. Medical Undergraduates have traditionally been instructed on the merits of Evidence Based Medicine and critical appraisal of medical literature. This instruction is however designed to address issues in a considered, systematic approach that is not time critical. It was not designed to assess the credibility of information accessed within the clinical environment for example at the bedside or within a patient consultation. The rapid change in access to resources, perhaps for the first time, has seen educational institutions reacting to changes in the learning environment which have been outwith their control. It is essential therefore that students, as practitioners of the future, develop digital literacy skills that reflect the environment in which they will be practising.

There have been initiatives within healthcare to address these concerns and provide access to reliable and trustworthy resources. Many of these initiatives dating from the initial development of the internet are no longer in existence but some have survived. The DISCERN project produced a questionnaire as a validated and reliable way of assessing the quality of written information on treatment choices for a health problem. This was however created primarily to assess the quality of information related to treatment options rather than medical reference resources and indeed significantly predates the mobile era. The Health on the Net Foundation has sought to provide certification for health resources as having met their code of practice for published resources and have sought to address the issue by building search engines to filter resources that are deemed unreliable. These projects have sought to act as gatekeepers of knowledge and continue to have relevance today but again were never designed to be used within the truly mobile environment.

Healthcare professionals and particularly those in training need to critically evaluate online resources for credibility, reasonableness and accuracy. This has been strongly advised by researchers and leaders in higher education, with students being expected to note and appropriately interpret the multiple characteristics of a source or application (app). (Barzila, 2012; Brem et al, 2001; Johnson & Kaye, 2000; Rouet, 2006, Wallace et al, 2001; Wiley et al, 2009) A number of studies have shown that students of all ages often do not evaluate the trustworthiness of their sources and find it difficult to apply any form of website evaluation criteria. (Brem et al, 2001; Hoffman et al, 2003; Kuiper et al, 2005; Wallace et al, 2001; Wiley et al, 2009) These studies indicate that students have a tendency to look at unreliable source characteristics such as layout, visual cues and surface relevance with one study noting that spontaneous skills such as seeking of scientific evidence and corroboration is rarely employed by these individuals. (Wiley et al, 2009)

A survey of technology ownership was conducted on clinical medical students at Manchester Medical School who were being issued with iPads as they entered their clinical training and education in 2013. This revealed a substantial change in ownership of mobile devices since the inception of the project in 2011. In a 21 month period self reported ownership of smartphones had risen from 36% to 89% in 2 years. Tablet ownership had risen from 17% to 59%. This represents a significant increase in technology ownership in such a short timescale. This shift in accessibility of resources therefore raises questions about how students use this new capability in their day-to-day learning. There
Beyond Angry Birds™: Using Web-Based Tools to Engage Learners and Promote Inquiry in STEM Learning
[www.igi-global.com/chapter/beyond-angry-birds/188955?camid=4v1a](www.igi-global.com/chapter/beyond-angry-birds/188955?camid=4v1a)

Economic Impact of Digital Media: Growing Nuance, Critique, and Direction for Education Research
[www.igi-global.com/chapter/economic-impact-of-digital-media/189028?camid=4v1a](www.igi-global.com/chapter/economic-impact-of-digital-media/189028?camid=4v1a)