

Information Retrieval from online medical information sources by nursing students whose mother tongue is not English / Zafrir Hanna

Abstract

Nursing students must acquire information from professional, reliable, up-to-date sources to ensure an appropriate level of nursing care. With abundant health-related information on the internet and elsewhere, it has become much more difficult to distinguish between lay and professional sources. To overcome such difficulties, detailed in numerous studies concerning students generally and nursing students particularly, the student must be information literate, especially in searching. However, nursing students studying in countries where English is not the everyday language, face the additional difficulty that most professional medical and nursing knowledge is in English, so adequate skill in accessing (and utilizing) that information is vital. Accordingly, aims of the research reported here were to characterize Israeli nursing students' information behavior, with particular concern for the relationship between their proficiency in English and their search skills when using online professional databases. In support of those aims, a workshop was developed to specifically assist the performance of nursing students when searching in English and to enable measurement of the actual impact of the workshop on their skill in searching, compared to that conceived and reported by them.

Research was conducted in two phases, qualitative, then quantitative. First phase: ten in-depth interviews with second and third year nursing students, to characterize information behavior and define possible barriers to and aids in accessing and searching professional information. Second phase: guided by the earlier findings, a cluster sample of 124 nursing students in total, from three academic institutions in the north and centre of Israel, were randomly assigned to experimental or control groups. Research tools developed for the study were tested for reliability and validity. All subjects completed a written Nursing Students Information Behavior and English Language Proficiency Questionnaire. The experimental group performed a search task using the online PubMed database for medical sciences, then participated in a three

hour-long, hands-on information retrieval workshop and after that performed a second, similar search. The workshop aimed to inculcate the principles and strategies of search appropriate to professional resources, assisted by tools for translation and spelling of professional keywords and phrases in English. The workshop also employed PowerPoint-based lectures, demonstrations and online search practice. The controls carried out the second search task only, without experiencing the workshop. All tasks were analyzed and compared for variables relating to search process and retrieval success.

First phase analysis presented ten themes within four categories: computer and internet use and skills, information searching behavior, English proficiency and its effect on information searching. Second phase: analysis of the Questionnaire revealed that subjects reported a high sense of mastery in computer skills, used mainly internet sites for overall searching and felt competent in this. However, in contradiction, they searched less for professional information in English, reported lower competence in this and reported mastery in information searching that was not correlated with actual skills, as demonstrated by the results of the first search task. Moreover, though most subjects did not consider English a considerable barrier in searching professional information, reported English proficiency correlated significantly with reported professional search skills. Linear regression analysis indicated that English proficiency accounted for a highly significant 16% of variance in professional information search skills, and 15.5% of variance in professional information search frequency, thus quantifying a relationship between English proficiency and the quality of information search behavior. Some differences were found between students with English (mother tongue mostly Hebrew) as the only Foreign Language (EFL-1) and those with English (mother tongue mostly Arabic) as a Second Foreign Language (EFL-2). Subjects whose mother tongue was Arabic were generally less proficient in English, searched the internet and professional databases in English less and reported a lower sense of mastery of professional information search skills. No other differences in information behavior were reported between these groups.

The experimental group reported the workshop as crucial to information and study needs. Comparison of pre- and post-workshop search tasks showed a significant improvement in query complexity and use of professional keywords. However, adequate practice is evidently required to internalize workshop content, as no significant im-

provement was found overall in English spelling or grammar, in reported satisfaction with search results or in retrieval success.

Although Israeli nursing students are proficient in computer skills and use the internet extensively for information searching, their ability in searching online databases may not ensure the standard of professional information retrieval required of them in the Nursing environment. Within this overall finding, English language proficiency was shown by this work to be a highly significant factor for successful retrieval by Israeli nursing students of relevant professional information from medical data bases; a finding probably applicable not only to Israeli nursing students. Accordingly it seems necessary, as a point of general policy relating to both nursing education and costs, to research and develop means designed to ensure a more proficient computer use of English by student nurses when searching professional information sources

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