Information Literacy Training Evaluation: The Case of First Year Psychology Students

Tina Kavšek *, Cirila Peklaj, Urška Žugelj

Department of Psychology, Faculty of Arts, University of Ljubljana, Askerceva 2, 1000 Ljubljana, Slovenia

A B S T R A C T

The purpose of our study was (a) to evaluate an effect of information literacy (IL) training in the first year psychology students and (b) to follow changes in acquired IL in time. Two groups of first year psychology students from two Slovenian universities participated in a quasi-experimental study. Experimental group (EG) consisted of 44 students and control group (CG) consisted of 42 students. Students' IL was assessed using Slovene version of IL test (Mittermeyer & Quirion, 2003). EG students attended IL training as a part of their study, whereas CG did not. The IL test was applied three times in both groups, namely before the beginning of IL training (pre-test), at the end of the training (immediate post-test) and a few months after the training (delayed post-test). EG's IL was increasing significantly over time and was the highest in delayed post-test, showing long-term effects of IL training. At the same time the differences in IL between EG and CG were increasing in favor of EG. Results have shown an important role of IL training in students' IL development over time. Study implications and limitations are discussed.

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INTRODUCTION

Due to rapid technological changes, successfully coping with various sources of information in education, the workplace, and in private life is becoming one of the key competencies for the 21st century (Rychen & Hersh Salgnik, 2003). Information literacy (IL) skills are essential for an individual to develop expertise in different fields. IL in tertiary education is therefore regarded as an important goal students should achieve in their studies. IL promotion can be integrated in different subjects, or can be achieved through separate IL trainings. The achievement of IL competency standards in higher education can be one of the indicators of university quality, and the evaluation of IL programs can be the first step in achieving these standards.

At the Department of Psychology of the University of Ljubljana, IL education training is included as part of the Methodology of Psychological Research course and takes place at the very beginning of bachelor studies to enable students to use the newly acquired IL competencies in all subjects and learning tasks. The goal of our research was to evaluate this IL education training.

LITERATURE REVIEW

INFORMATION LITERACY - A KEY COMPETENCY FOR THE 21ST CENTURY

New generations of students have never known life without the internet and feel very much at home in the digital world (Lorenzo & Dziuban, 2006). They have entered university empowered with a great variety of technical skills, which they have gained both through formal and informal learning. Nevertheless, concerns arise about the challenges that the so called "Net Generation" faces in their access to and interaction with information. Hughes, Bruce, and Edwards (2007) define it as an IL imbalance between well-developed digital skills and less developed critical awareness. These students are confident in communicating and searching online for personal reasons. But their online effectiveness is less evident in a study context. For example, they are highly dependent on popular search engines, such as Google and Yahoo, and are unfamiliar with alternative sources of information such as journal and specialist databases. They find it difficult to develop effective search strategies and have limited critical evaluation of web-based resources.

The Information Literacy Competency Standards for Higher Education of the Association of College and Research Libraries (2000) define IL as increasingly important in the contemporary environment of rapid technological change and proliferating information resources. They further acknowledge that due to the escalating complexity of

* Corresponding author.
   E-mail addresses: kavsek.tina@gmail.com (T. Kavšek), cirila.peklaj@ff.uni-lj.si (C. Peklaj), urska.zugelj@gmail.com (U. Žugelj).

this environment, individuals are faced with diverse, abundant information choices. Information is available through many sources (i.e. libraries, community resources) and in unfiltered formats, thus raising questions about its authenticity, validity, and reliability. In addition, information is available through multiple media and these pose new challenges for individuals in evaluating and understanding it. Therefore, a complementary cluster of abilities is necessary to use information effectively and create informed citizens (ACRL, 2000).

Institutions engaged in manufacturing or disseminating information are becoming increasingly important in the field of IL (Novljan, 2002). These institutions include universities and their libraries, which provide students with various IL programs.

IMPORTANCE OF INFORMATION LITERACY FOR HIGHER EDUCATION

An information-literate individual should be literate in many ways: he is expected to read and write, which is consistent with the concept of traditional literacy. Additionally, he should be able to operate the computer, telecommunications and related information technology (technology-literate), as well as be media- and network-literate. All these types of literacy are within the scope of solving information problems and their intersection represents IL (McClure, 1994). In our study an American Library Association definition of IL was adopted according to which IL is defined as a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information (American Library Association, 1989). Information literacy forms the basis for learning and all learning environments as well as at all levels of education (ACRL, 2000). It enables learners to assume greater control over their own learning. "An information-literate individual is able to: determine the extent of information needed, access the needed information effectively and efficiently, evaluate information and its sources critically, incorporate selected information into one's knowledge base, use information effectively to accomplish a specific purpose and understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally" (ACRL, 2000, p. 2–3).

IL is now considered by several regional and discipline-based accreditation associations as a key competency for college students, because it enriches them with the abilities of evaluating, managing, and using information (ACRL, 2000). Moreover, IL has been recognized and endorsed as an essential student-learning outcome by stakeholders in higher education (Saunders, 2012). The Association of College and Research Libraries (2000) further implies that the skills and concepts associated with IL are relevant to all disciplines and should be addressed within the majors and programs, as well as part of the general education curriculum. However, ACRL also recognizes that incorporating IL across curricula, in all programs and services, and throughout the administrative life of the university, requires the collaborative efforts of faculty, librarians, and administrators.

In fulfilling their study tasks, learning and knowledge construction, students are expected to select and responsibly use appropriate information. Namely, they have to evaluate the effectiveness of various information channels (such as libraries, internet, etc.) and the information source itself. They also need to gain skills for creating and storing their own information and to follow the rules of copyright law when using the intellectual property of others (Petermanec, 2004). The quality of a university is, among other things, measured by the extent of resources available for learning and by the proportion of students using them during their studies at the university.

INFORMATION LITERACY EDUCATION

In order to obtain IL, continuous work at all levels of formal education - primary, secondary and tertiary, is needed (Bundy, 2004). Achieving IL requires an understanding of the fact that its definition is not only one of the points in the curriculum, but is embedded into the content and structure of the process itself. Obtaining IL means learning a set of generic skills as well as acquiring knowledge in a specific subject area (Grafstein, 2002). The essential differences between scientific fields occur mainly in specialized information resources and computer databases and in the use of specific classification systems of science (Brečko, 2004). Therefore, students should be taught to use those information sources and databases relevant to their area of expertise. Z. Petermanec (2004) describes three types of IL programs in Slovene universities: (a) short bibliographic instructions (to acquaint users with the possibilities of library use and to develop library location and orientation skills), (b) IL as a separate subject, and (c) incorporating IL training in different subjects in study programs. The respective IL training was developed according to cognitive-constructivist theoretical perspective on learning. In this perspective students actively construct their own knowledge structures by integrating new information with the old. As a result, better connected knowledge leads to higher achievement in further learning (Mayer, 2003). In order to achieve better transfer of students' knowledge, IL training in our study was introduced as a part of a subject in the study program.

RESEARCH

In several studies (Cranney, Morris, Spehar, & Scoufis, 2008; Fitzpatrick & Meulemans, 2011; Ford, Foxlee, & Green, 2009; Godec, Jug, Kotar, Stopar, & Rabzelj, 2006; Larkin & Pines, 2004), researchers found that different forms of training in IL contribute to the improvement of IL and related skills.

Some studies regarding IL have been conducted in the field of psychology. Fitzpatrick and Meulemans (2011) conducted a quasi-experiment using a pretest-posttest assessment with undergraduate students in an introduction to developmental psychology course. Control group received assignment and instructions only, experimental group received a librarian-led workshop in addition to the assignment and instructions. During the workshop, the librarian provided explanations about reference materials that could be accessed from the library or internet, gave instructions on the use of keywords and demonstrated how students could access APA citation guidelines. Each student used his or her own computer to access the library Web page and find reference materials on their selected topics. Meanwhile, the librarian and class instructor guided the students and answered individual questions. The results showed a significant difference in posttest scores on students' information literacy skills between those who participated in the workshop and those who did not.

In another study, researchers at the University of New South Wales in Australia introduced a program for developing IL and team-work skills in first-year psychology students (Cranney et al., 2008). The program comprises four one-hour lectures and an hour long practical each week. The authors have compiled five modules of IL skills covering the basic components of IL knowledge and skills: available information resources, searching and locating references in the library, defining the topic and searching databases, citation searching, evaluating information. The learning and teaching strategies included were: (a) a lecture and a tutorial class introducing students to the modules, (b) a percentage grade allocation for completion of the online modules and (c) a series of assessment tasks (i.e. two field studies, a research report and an experimental methodology assignment). Each module included a pretest, immediate post-test and delayed post-test (at the end of the study semester). A statistically significant improvement between pre- and post-tests was shown for all modules. Although the progress made during the pre- and post-tests can reflect the impact of short-term learning, the improvement through the semester shows the long-term effect of participation in IL tutorial. However, the researchers did not include a control group and the students' improvement could be the result of some other process at work and not solely their participation in the program.