

Self-Efficacy: An Alternative Approach to the Evaluation of Information Literacy

Serap Kurbanoglu

Professor, Department of Information Management, Hacettepe University,
Ankara, Turkey

Abstract

Information literacy is the key skill required for lifelong learning, however, acquiring information literacy skills is not enough by itself for success; individuals should also develop confidence in these skills. Low self-efficacy beliefs may be a significantly limiting factor for individuals to use their information literacy skills effectively. Determining the level of self-efficacy beliefs for information literacy will enable individuals 'at risk' to be identified. Therefore, it is suggested to use self-efficacy scales as additional assessment tools while mixing and matching assessment methodologies to gather usable information for the evaluation of information literacy instruction programs.

Keywords: Information literacy, self-efficacy, evaluation, assessment

1. Introduction

Societies of information age need independent learners equipped with lifelong learning skills. Information literacy – the ability to find, use and communicate information - is the keystone of lifelong learning. Information literate people are critical thinkers, effective consumers of information, and self-directed learners who use and communicate information effectively and responsibly. Members of information society should be equipped with information literacy skills to be able to succeed in a world where change is the basic driving force of the daily life. However, acquiring information literacy skills is not enough by itself for success; individuals should also develop confidence, in other words strong self-efficacy beliefs in these skills.

Libraries, in all sorts, play a central role in teaching information literacy skills. Creating and maintaining information literacy programs that will support lifelong learning has become a mission for almost every library. In order to increase the quality and the success of information literacy training programs, instructors develop assessment strategies. There are many of tools and techniques which can be used for the assessment of information literacy training programs. In this paper, self efficacy beliefs for information literacy will be examined as an additional assessment strategy in the overall evaluation of an information literacy program.

2. Assessment & Evaluation: Key Components of Instruction Programs

Assessment, collection and the analysis of data about learner's performance, and evaluation, the interpretation of that assessment (Grassian & Kaplowitz, 2001), should always be seen as part of teaching process to find out how well the goals and objectives of an instruction program have been met. The main aim of assessment is continual examination of both teaching and learning for improved learner performance. Assessment results can be used in monitoring learner's progress, improving instruction, carrying out program evaluation,

defining program's strengths and weaknesses, modifying or improving the program and motivating learners (Gage & Berliner, 1991). According to information gathered through the assessment process, adjustments can be made in methods, techniques and material. Furthermore, the results of assessment contribute to the decision making about the future of the program.

In order to increase the quality and the success of information literacy training programs, instructors should plan evaluation and assessment strategies. Assessment strategies and techniques vary along several parameters. They can be formal or informal; formative or summative; qualitative or quantitative. Furthermore, different techniques vary as to their reliability, validity, and usability. Evaluation and assessment strategies and methodologies should be selected according to their relevance to the learning outcomes or performances to be measured. Selecting an appropriate technique depends on having a thorough understanding of the strengths and weaknesses of the various techniques. Mixed data collection and triangulation (a combination of methods) are increasingly being used for the evaluation. However, practical constraints such as time, money, and available expertise should also be considered before taking decisions on which techniques to use (Grassian & Kaplowitz, 2001).

Interest in developing strategies and tools to assess information literacy is growing. The number of librarians introducing assessment of information literacy into their organizations is increasing along with the number of assessment tools developed by these librarians. Librarians, most often, attempt to assess information literacy skills by using tests based on multiple choice, fill-in-the-blank, and matching questions. However, there has been a debate about inefficiency of these tests to evaluate higher order skills and information literacy skills in real life situations (Walsh, 2009; Dunn, 2002; Scharf et al, 2007). Open ended questions, essays, portfolios, self-assessment scales, interviews and observations are other assessment tools being used.

This paper neither attempts to provide an overview of assessment methods and tools nor to determine the best methods for assessing information literacy. It points out instead that information literacy instructors should be more critical and flexible in the use of assessment tools and techniques than ever and should consider mixing and matching methodologies and tools to gather the greatest amount of usable information for the evaluation.

3. The Concept of Self-Efficacy and Sources of Self-Efficacy Beliefs

The concept of self-efficacy has been developed primarily in the discipline of social psychology by Bandura (1977; 1986; 1997). Self-efficacy refers to a belief in one's ability to successfully perform a particular behavior or task (Cassidy & Eachus, 1998). Bandura (1997) defines self-efficacy as a belief in one's own capabilities to organize and execute the course of action required to attain a goal.

There is a close link between attitudes and experience, and the attainment of self-efficacy. Research by Bandura (1986) shows that efficacy perceptions develop from a gradual attainment of skills and experience over time. Within the construct of perceived self-efficacy, the motivation of behavior is one's belief in the capability to perform an act (Bandura, 1997).

According to Bandura self-efficacy beliefs are influenced by four principal sources of information namely mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states (Bandura 1986; Koul & Rubba, 1999; Pajares, 2002)

Mastery experiences: Individuals form their self-efficacy beliefs by interpreting information primarily from their previous experience. Individuals

interpret the results of their actions and use the interpretations to develop beliefs about their capabilities to engage in subsequent activities (Bandura, 1994; 1995; Pajares 2002; Koul & Rubba, 1999) Typically, successes raise self-efficacy while failures lower it. On the other hand, as Bandura (1986) indicates, after a strong sense of self-efficacy is developed through repeated successes, occasional failures do not effect it easily.

Vicarious experiences: Self-efficacy appraisals are partly influenced by “vicarious experience” of observing others perform tasks. The influence of the vicarious experiences on self-efficacy beliefs is weaker than the mastery experience. Individuals become especially sensitive to vicarious experience when they have had insufficient familiarity with the task in their hands. Vicarious experience is particularly powerful when observers see similarities between themselves and the model. Observing the successes of such models contributes to the observers’ beliefs about their own capabilities. On the contrary, failures of such models can undermine the observers’ beliefs about their own capability to succeed (Bandura, 1986; 1995; Pajares, 2002).

Social persuasion: Verbal persuasion which individuals receive from others can also contribute to the development of self-efficacy beliefs. Positive persuasions may empower, negative persuasions may weaken self-efficacy beliefs. People who are persuaded verbally that they possess the capabilities to master given tasks are likely put more effort when difficulties arise. It is usually more difficult to strengthen self-efficacy beliefs through positive encouragement than to weaken it through negative appraisals (Bandura, 1986; 1995; Pajares, 2002).

Physiological and emotional states: Physiological state also influences self-efficacy beliefs. People gauge their degree of confidence by the emotional state they experience as they contemplate an action. Strong negative emotional reactions, such as anxiety, stress, and fear can lower self-efficacy perceptions (Bandura, 1986; 1995; Pajares, 2002).

4. The Importance of Self-efficacy for Information Literacy

Self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment. In other words, self efficacy beliefs influence the totality of human behavior. People have little incentive to act or to persevere if they believe that the task in their hands exceed their capabilities, but they undertake and perform activities if they believe that their actions can produce the outcomes they desire (Bandura, 1977; 1986; Pajares, 2002; Koul & Rubba, 1999; Cassidy & Eachus, 1998).

According to Bandura (1977) success is not only based on the possession of necessary skills, it also requires the confidence to use these skills effectively. Hence, besides learning information literacy skills individuals of today’s societies must also develop confidence in the skills that they are learning. Attainment of strong sense of self-efficacy beliefs becomes as important as possessing information literacy skills.

Self-efficacy beliefs determine how long individuals will persevere and how resilient they will be in the face of difficulties and how much effort they will expend on an activity. Individuals with a high self-efficacy perception expect to succeed and will persevere in an activity until it is completed. On the contrary, individuals with low self-efficacy perception anticipate failure and are less likely to persist doing challenging activities. The higher the sense of efficacy, the greater the effort, persistence, and resilience (Pajares, 2002) which are two factors crucial for information problem solving, self-regulated learning and lifelong learning. Bandura underlines that individuals who develop a strong

sense of self-efficacy are well equipped to educate themselves when they have to rely on their own initiative (Bandura, 1986). This is why developing a strong self efficacy perception for information literacy becomes necessary to accomplish lifelong learning.

Self efficacy is a factor which influences human functioning. Although the knowledge and skills they possess play critical roles on the choices they make, people's level of motivation, and actions are based more on what they believe than on what is objectively true (Bandura, 1997; Pajares, 2002). Because high level of self-efficacy leads to a desire and willingness to act and to risk trying a new behavior, it becomes important for the use of information literacy skills for lifelong learning. If individuals feel themselves competent and confident about their information literacy skills they will willingly undertake and solve information problems. Otherwise, it is more likely that they will avoid and hesitate to try solving information problems in their hands.

Self-efficacy has generated research in areas as diverse as medicine, business, psychology, education and computers (O' Leary, 1985; Lev, 1997; Schunk, 1985; Koul and Rubba, 1999; Delcourt and Kinzie, 1993; Karsten and Roth, 1998; Compeau and Higgins, 1995). The number of the research regarding to self-efficacy for information literacy, however, are only few in number (Akkoyunlu and Kurbanoglu, 2003; Kurbanoglu, 2003; Kurbanoglu, Akkoyunlu and Umay, 2006). As Neely (2002) has indicated sociological and psychological factors involved in the development of an information literate individual are neglected. Perceived self-efficacy can be considered as one of the psychological factors which has an impact on information literacy.

5. Measuring Self-Efficacy

Because self-efficacy is based on self perceptions regarding particular behaviors, the construct is considered to be situation specific or domain sensitive. That is, an individual may exhibit high levels of self-efficacy within one domain while exhibiting low levels within another one (Cassidy & Eachus, 1998).

Perceived self-efficacy refers to an identified level and strength of self-efficacy. The strength of self-efficacy is measured by degrees of certainty that one can perform given tasks (Zimmerman, 1995). Therefore, although self-assessment is considered as a rather subjective method, self-efficacy demands to be measured directly (rather than indirectly) by the use of self-report scales (Cassidy & Eachus, 1998). Preparation of self-efficacy scales requires time and patience. One must be certain to measure the self-efficacy beliefs relevant to the behavior in question (Pajares, 2002).

The necessity for the measuring self-efficacy for information literacy relates to the impact information literacy is having on many aspects of life and in particular on lifelong learning. Increasingly individuals of information societies are expected to be proficient users of information. Low self-efficacy may be a significantly limiting factor for individuals exploring information problem-solving skills vital for lifelong learning. The development of an appropriate measure of self-efficacy for information literacy will enable individuals 'at risk' to be identified.

6. Conclusions and Suggestions

Low self-efficacy beliefs may be a significantly limiting factor for individuals to use their information literacy skills. Reducing anxiety and increasing learners' confidence in their own information literacy skills should be valid and important goals of information literacy instruction. Measurement of self-

efficacy for information literacy will enable learners who might need additional help to be identified. Therefore, it is recommended that, in addition to assessing individuals' actual knowledge and skills on information literacy, methods have to be developed to assess the level and strength of their self-efficacy beliefs regarding to these knowledge and skills. Admittedly, assessment of self-efficacy beliefs does not provide all the necessary information to be used for the evaluation of instruction programs by itself. It should be considered as a part of an overall evaluation strategy while mixing and matching variety of methodologies and tools to gather usable information for the evaluation.

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