

Self-Efficacy & Technology: Teaching and Learning Using a Handheld Computer

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Summary of Research

The main thrust of this research study is to provide a body of verified information about a limited phenomenon, that is, the influence of self-efficacy and the use of technology (a portable handheld computer) among middle school students. The research question is as follows: Does a portable learning device impact learning during the middle school years and if so, how self-efficacious are students in using a handheld computer? Quantitative and qualitative data will be gathered as a result of interviews, technology questionnaires, and The Children's Self-Efficacy Survey (CSES). Attitudes towards computers and commitment of computing skills have been recognized as important factors to assist high school students and college students in acquiring computer technologies; however, very little research has been done at the middle school level.

The research goal governing the research project is to gain a better understanding of the factors that may help determine how technology impacts learning. Implicit in the research is the nature of self-efficacy as a behavioral factor that influences academic success. Self-efficacy is defined as the levels of confidence individuals have in their ability to execute courses of action or attain specific performance outcomes (Bandura, 1977, 1982, 1995, 1997). Therefore, self-efficacy theory is the theoretical lens through which this study will examine the respondent's beliefs about his or her capability to produce a desired outcome which will influence academic success through the use of a handheld computer. Since motivation is said to be the key to academic success, it should be noted that efficacy beliefs contribute to motivation in several ways:

They determine the goals people set for themselves, how much effort they expend, how long they persevere in the face of difficulties, and their resilience to failures. When faced with obstacles and failures, people who distrust their capabilities slacken their efforts or give up quickly. Those who have a strong belief in their capabilities exert greater effort when they fail to master the challenge. Strong perseverance contributes to performances and accomplishments (Bandura, 1995, p. 8).

Because of the scant data on this subject, the study is exploratory and descriptive in nature. Exploratory studies are designed to research areas in which little information is available. "The description of phenomena is the starting point for all research endeavors" (Fraenkel & Wallen, 1996, p. 13). Descriptive research designs involve collecting data in order to test hypotheses and answer questions regarding the current status of the individuals involved in the study (Gay, 1996). Thus, the findings will consist of (a) site description, (b) the findings and quotes from the selected group of middle school students who will be interviewed, (c) the statistical analysis of the Children's Self-Efficacy Surveys, (d) a chart of the themes and concepts emerging from each question, and (e) a summary of the findings.

The anticipated value of this project will be beneficial to the area of research in technology and the influence of self-efficacy using a handheld device which is an area where there is limited research. The research will also contribute to data driven decisions related to the use of handheld computers in the classroom, especially with middle school learners. Incorporating handhelds will enhance student's level of confidence, encourage autonomy, and embrace group collaboration which will prepare them to become lifelong learners. Therefore, it is critical as a researcher to explore this critical area which may have an impact on student's learning. The handheld computer is an opportunity to reach the 21st century child who is accustomed to electronics, gadgets, media, hands on activities, and multiple learning styles. Most schools have a computer lab and or a small number of desktop computers in each classroom. However, handhelds are portable, inexpensive, and run many of the same programs as a desktop and laptop computer. This will allow each student to have a handheld computer (ownership) whenever and wherever it makes sense to do their

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academic work. After all, the personal computers are the next most-popular computing platforms.

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