DOCUMENT RESUME

ED 474 439 SE 067 490

AUTHOR	King, Kenneth P.
TITLE	The WebQuest as a Means of Enhancing Computer Efficacy.
PUB DATE	2003-03-13
NOTE	17p.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Educational Technology; Elementary Education; Inquiry; *Internet; Learning Strategies; Preservice Teachers; Professional Development; Science Education; *Self Efficacy; Teacher Education Programs; Teaching Methods

ABSTRACT

This study examined the efficacy and outcomes expectancy of elementary preservice teachers related to using a WebQuest strategy to develop inquiry skills among elementary students. The findings of this study show that students in the experimental section of a group of preservice elementary teachers enrolled in a science methods course demonstrated a decrease in outcomes expectancy as measured on the MUTEBI instrument as compared to preservice teachers in a control group. Given that the preservice elementary education majors were in an experimental group that included actual classroom instruction with technology, concern arises with respect to having a nominally useful activity work against infusion of technology in the science classroom. Discussion from the author interprets the findings and offers thoughts for applying this in future teaching and clinical settings. (Author)

The WebQuest as a Means of Enhancing Computer Efficacy

Kenneth P. King

Department of Teaching and Learning

Northern Illinois University

DeKalb, IL 60115

W: 815-753-0384

F: 815-753-8594

kking1@niu.edu

Abstract

This study examined the efficacy and outcomes expectancy of elementary preservice teachers related to using a WebQuest strategy to develop inquiry skills among elementary students. The findings of this study show that students in the experimental section of a group of preservice elementary teachers enrolled in a science methods course demonstrated a decrease in outcomes expectancy as measured on the MUTEBI instrument as compared to preservice teachers in a control group. Given that the preservice elementary education majors were in a experimental group that included actual classroom instruction with technology, concern arises with respect to having a nominally useful activity work against infusion of technology in the science classroom. Discussion from the author interprets the findings and offers thoughts for applying this in future teaching and clinical settings.

Preparing Elementary Science Teachers to use Technology:

The WebQuest as a Means of Enhancing Computer Efficacy

The use of instructional technology in the classroom has been advocated for decades (Author, 1999; 2001). The inventor Thomas Edison even went so far as to remark:

> I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks. I should say that on the average, we get about two percent efficiency out of schoolbooks as they are written today. The education of the future, as I see it, will be conducted through the medium of the motion picture...where it should be possible to achieve one hundred percent efficiency. (Cuban, 1986, p. 9)

While Edison's prediction--a motion-picture based curriculum--never came to pass, advocates of instructional technology in the classroom consistently make their advocacy known. Local state standards, most typically, require the application of instructional technologies in the science curriculum (c.f., Illinois State Board of Education, 1997).

Despite the numerous strategies that have come to the fore, the challenge of implementing the use of technology in a meaningful manner has often been elusive. Many pieces of software offer comprehensive databases of information (ADAM Software, 1995; Hamilton, 1996), but save for a smattering of modeling and simulation software (Fazio & Keranen, 1995; Knowledge Revolution, 1997).

What the most common types of computer software tend to neglect are experiences for students that promote processes of inquiry. While programmed instruction types of software are helpful for mastering facts, the intellectual engagement required as students engage in inquiry-based activities is less often accomplished through the use of instructional technology. While effective teachers can use technology as a tool to engage students and promote inquiry, it is more an artifact of the way the teacher uses the technology than an outcome of the technology's instructional design.

One promising strategy supporting the inquiry-based practices in science education is the WebQuest. From the WebQuest site:

> A WebQuest is an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. WebQuests are designed to

> use learners' time well, to focus on using rather than looking for it, and to support learners' thinking at the levels of analysis, synthesis and evaluation. (Dodge, 2001, paragraph 2)

WebQuests have entered the educational domain of teachers and students since their development in 1995. They provide an excellent means of having students engage in inquiry-based experiences, using the Internet as a medium for information collection and dissemination (Milson, 2001; Milson and Downey, 2001). WebQuests have been determined to be an effective inquiry tool for a wide range of students, from post-high school and university level students (Spanfelner, 2000; Summerville, 2000), as well as for learning disabled students (Kelly, 2000). WebQuests also display the elements consistent with qualities of "engaged learning" (NCREL, 1999), which promotes the learning of content in a manner that is meaningful to the student. The WebQuest approach also represents a significant means of infusing technology into science instruction at a data analysis level of interaction (Tinker, 1987).

Introduce the Problem

The use of the WebQuest strategy provides the means for promoting inquiry-rich technology experiences for students. WebQuests have been designed for all levels of students, from early elementary through students at the university. Summerville (2000), examining applications of WebQuests for preservice teachers, noted that development of WebQuests had the effect of quelling apprehensions her students had with respect to using technology in the classroom. Her students constructed WebQuests on a variety of topics, consistently improving their regard for the use of technology in the classroom, as anecdotally reported by Summerville (2000).

The purpose of this study was to empirically extend Summerville's work to determine any changes in efficacy or outcomes expectancy resulted from developing WebQuests and from delivering classroom instruction with WebQuests.

For the purposes of this study, the author advanced the following null hypothesis:

- There will be no significant difference in outcomes expectancy between students constructing WebQuests in an elementary science methods class and using the WebQuest to deliver instruction to elementary school students when compared to students who only construct a WebQuest.

- There will be no significant difference in computer efficacy between students constructing WebQuests in an elementary science methods class and using the WebQuest to deliver instruction to elementary school students when compared to students who only construct a WebQuest.

The experimental design used in this investigation is a pretest-posttest design with a control group. Students enrolled in two sections of an elementary science methods course at a large Midwestern university provided the pool of participants for the study. One section of students served as the control group. A second section served as the experimental group.

Implicit in this study is the position that the effective use of technology is a skill set worth developing among elementary teachers. To better develop effective use of instructional technology in the classroom, the author of the study sought to determine the value of actually teaching elementary students with technology as it impacts the preservice teacher's sense of technological efficacy and outcomes expectancy.

Theoretical implications of the study

The overriding goal of science methods courses is to provide preservice teachers experiences and opportunities that build their confidence, capacity and expertise in teaching science, including the use of technology. Self-efficacy provides one means of gaining insight into those affective issues that impact a teacher's ability to teach science and to use technology as an instructional strategy. Teacher efficacy is the teachers' beliefs about their own capacities as teachers (Tschannen-Moran, Hoy, & Hoy, 1998). The development of teacher strong efficacy beliefs among preservice teachers is one indication that coursework and practice influences a preservice teacher's classroom effectiveness (Housego, 1992; Hoy & Woolfolk, 1995). Previous studies examining this topic--that heightened positive self-efficacy among prospective science teachers is essential for the improvement of the profession--are numerous and emphasize a number of the same issues. From the broader literature of self-efficacy and modeling, there is abundant support for this approach. Bandura's (1986) social-cognitive theory of learning states that individuals learn by observing the behaviors of others and the social consequences of those behaviors. Real life models and symbolic models (such as those seen through various kinds of media, such as video) can function effectively as models of behavior. These models influence the prospective teacher's expectations of success, as described in the work of Eccles (Parsons) (1983). Successful participation in the application of technology in science teaching may be associated with successful teaching with technology later during their careers. Having those skills modeled by an effective classroom teacher should assist preservice teachers in the development of their own skills and increased positive attitudes towards teaching with technology.

Method

The elementary students were all grade six students enrolled in a grade 5-6 intermediate level building. Students in the three science classes participating reflected the school district's demographics (76.2% white, 8.4% black, 11.0% Asian, 0.1% native American, and 21.4% low income) with one of the classes having an overall higher proportion of language minority students enrolled (school average: 3.7% versus class percentage of 30.0%) (Illinois State Board of Education, 2001). To this end, these students received help during class from a bilingual teacher's aid. The WebQuest also identified the Babelfish translation software (AltaVista, 2002) for the use of language minority students to help them overcome language barriers that might be present in the written text of the project.

The first exposure the 6th grade students had with the WebQuest (King & Author, 2001) was during an eight-day lesson taking place during the first month of the 2001-2002 school year. Students interacted with the WebQuest using wireless laptop computers and used Netscape Navigator as their web browsing software. The WebQuest experience sought to develop elementary student knowledge supporting the nature of science, focusing on the personal and professional skills that scientists use to carry out their scientific investigations. The challenge given to students was to "hire" the best scientist for an unspecified position in a research laboratory. Students were to examine biographies of scientists extant on the Internet, and from the data collected, develop a set of generalizations as to what skills were valuable to scientists. From the generalizations, they determine what set of skills are most important to a scientist, and from that, make a hiring decision.

Preservice teachers enrolled in an elementary science methods course were required to create a WebQuest. The preservice teachers worked in groups of either 5 or

6. The content of the WebQuest was required to support the curricular requirements of the local school district for 6th grade students. Two classes of preservice elementary education teachers were involved in the project, one as a control group and one as an experimental group. There were thirty students enrolled in each of the classes. All students were required to submit a WebQuest to the science methods instructor as part of overall course requirements. In addition to submitting the WebQuest to their instructor, the experimental group had two additional course requirements:

(1) Students in the experimental spent at least one day visiting the teacher in the sixth grade class that was making use of the WebQuest. During this time, the preservice teachers helped to teach the class using the WebQuest. They participated in this experience in the same grouping as they used to develop the WebQuest.

(2) After development of their WebQuests, the students in the experimental group returned to the same classroom and taught their WebQuest-based lesson to the sixth grade students. The sixth grade teacher was present in the classroom during these times to facilitate the lesson.

To assess changes in the preservice teachers during the course of the semester, the MUTEBI instrument (Enochs & Riggs, 1993) was used to evaluate changes in technology efficacy and outcomes expectancy. The instrument was administered three times during the course of the semester. The first administration took place during the first day of class, as a baseline measure. The second administration took place after all students had completed construction of a WebQuest to be used for science instruction. The experimental group, at this point, had interacted with the elementary students in the implementation of a WebQuest. The final administration of the instrument came during the final weeks of the course, by which time the experimental group of preservice teachers had taught their WebQuest to students in the sixth grade classroom.

Results

The following results were obtained through the MUTEBI instrument. An ANOVA procedure was employed to compare means between groups.

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Insert Table 1 about here

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The data summarized in Table 1 offers comparisons between the experimental group and the control group for the constructions of outcomes expectancy and personal efficacy. The data in Table 1 shows a significant difference for the outcome expectancy factor between the experimental group and the control group. The mean difference of 1.1034 indicates a higher degree of outcome expectancy for the students in the control group. The null hypothesis relating the outcome expectancy as a function of experimental/control group is rejected.

No statistically significant differences were noted between the experimental group and the control group for the personal efficacy measure. The null hypothesis testing personal efficacy as a function of experimental/control grouping is accepted.

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Insert Table 2 about here

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Insert Table 3 about here

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Tables 2 and 3 present data that summarize changes in outcome expectancy and personal efficacy as a function of time, as a function of either enrollment in the control group or experimental group. The data shows significant differences between the first and third administration of the MUTEBI instrument for the personal efficacy measure for only the control section. There is no significant interaction for the control group's outcomes expectancy measure. The experimental group showed now significant changes among measurements across time for either the outcomes expectancy or the personal efficacy measures.

Discussion

The differences that emerged from the mean scores provide helpful information for the methods course instructor seeking to use WebQuests as an instructional strategy.

Given that a significant difference between the experimental and control groups in terms of the outcome expectancy construct, with the control group having a higher mean score than the experimental group, it would appear that working with actual elementary school students challenged their beliefs that their instruction could effect the learning outcomes of students. This is perhaps troubling, as the movement towards greater use of technology in the classroom requires, by default, teachers that are facile in the use of technology. One inference to be drawn from the data is that working in the challenging and potentially frustrating world of "real" students and computers leads preservice teachers to move more responsibility to the elementary students, or to even abdicate a certain degree of responsibility for educating them with technology.

It is also important to recognize a very practical outcome of this experience. While outcomes expectancy and efficacy measures offer important insights into the perceptions of the preservice teachers, it was observed that the students in the experimental group produced much better, more workable, and more coherently constructed WebQuests than did the students in the control group. Having a "real" audience of students, while depressing their outcomes expectancies values with respect to the control group students, helped them produced instructional materials that were of much greater quality.

The experienced elementary teacher noted several issues that may be relevant to this study, and to the experimental group of preservice teacher's statistically lower outcomes expectancy:

(1) Relatively low level of technological sophistication among elementary students. Elementary students had some mastery of technology, but it tended to be very situation-specific, such as playing games at a particular web site.

(2) Unforeseen technical obstacles using a new (and then untried) technology--a wireless computer laboratory. While this is to be expected--that occasional problems using technology are part and parcel with the experience--naïve preservice teachers might have found the situation inordinately frustrating.

<u>Implications for methods course instructors.</u>

For methods course instructors, the need for the students to experience the role of a teacher in an environment that matches as closely as possible the world of a classroom teacher is essential. That there was a statistically significant factor suggesting that a classroom-based experience can potentially provide a disincentive for students is troubling.

The commitment to working with students in a field setting undergirds most contemporary teaching practices. Despite the suggestion from this study that a decrease in outcomes expectancy can arise from the combination of using computer technology in a real classroom, the message for methods course instructors is that clinical settings should be carefully designed to assure the success of preservice teachers taking part in the experience. Preservice teachers, during classroom discussions during them methods course, expressed some concern that the level of computer skills demonstrated by the elementary students was low. This would seem to be a "reality check" for many preservice teachers that students do not come to the classroom with a complete set of skills in place, and that some classroom time addressing the use of the computer is necessary as a precursor to using the computer to serve as an instructional tool. For her part, the classroom teacher hosting the preservice teachers found that the elementary students performed well and her high expectations for their performance had been met using the WebQuest as a teaching strategy. She recognized the need to teach students the technical skills necessary to use the computer.

Implications for methods course students.

For methods course students, the author of the study can see a need to help provide them with a better context in which to take part in a project like this in the future. The preservice teachers, were to some extent surprised by what they perceived as a lack of technology skills on the part of the elementary students. The point needs to be better emphasized by the methods course instruction that this perceived lack of skill can be remedied (and it was) by briefly spending time improving student skills with computers.

From the findings of this study, it is clear that time must be spent in the context of the methods course to help students move beyond the "blame the victim" mentality. Perceptions of preservice teachers should either be encouraged (as in high efficacy) or dealt with in a rational fashion--that all students can learn, and that a caring and prepared teacher is often exactly the tool that is needed to make learning happen.

Methods course students in the control group demonstrated an increase in their personal efficacy as measured by the MUTEBI instrument. In this context, it can be inferred that their positive experience with technology--learning basic web page construction skills and being asked to apply the WebQuest strategy to teaching--was a positive experience for the students. Their own perception of their ability to use technology in the classroom increased as a result of their mastery of new skills. This finding is helpful; the challenge is to find ways to help students in the clinical-based setting, in which they both create and teach with a WebQuest, to experience a similar gain in self efficacy. As it stands, it remains an important reminder that the visceral nature of real world teaching while sometimes not working toward enhancing efficacy, can serve as a more important instructional laboratory for students.

Implications for elementary teachers.

For elementary teachers, the WebQuest has already become a helpful tool for the development of reasoning skills. From the experience noted by this teacher, the means by which information was acquired during this lesson was superior than when it was acquired by the direct instruction approach used previously. While the approach used during this lesson--inquiry--is not reserved exclusively for use with computer technology, the structure of the WebQuest made using an inquiry-rich approach a relatively easy matter to develop and implement.

In terms of using a technology-based approach such as the WebQuest, the challenges noted by the methods course students (elementary student difficulties with the mechanics of using the computer) should be heeded by all teachers for whom using classroom technology is a novelty. While none of the difficulties encountered were insurmountable, they appeared to tax the skills of the preservice teachers, and would doubtless be a disincentive for using technology for practicing teachers with no particular commitment to using technology in instruction.

References

Author. (1999). Journal of the Association for History and Computing

Author. (2001). Technology, science teaching and literacy: A century of growth.

King, T. & Author. (2001). Webquest

ADAM Software. (1997). The Inside Story, version 2.0 [computer software]. Atlanta, GA: ADAM Software, Inc.

AltaVista Company. (2002). AltaVista Company World/Translate. [Online]. Available: http://world.altavista.com/tr

Bandura, A. (1986). Social foundations of thought and action: A social-cognitive theory of learning. Englewood Cliffs, NJ: Prentice-Hall.

Cuban, L. (1986). Teachers and machines: The classroom use of technology since 1920. New York: Teachers College Press.

Dodge, B. (2001). Site overview. What's a WebQuest? [Online] 4 paragraphs. Available: http://edweb.sdsu.edu/webquest/overview.htm [2002, February 4]

Eccles (Parsons), J. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.) Achievement and achievement motives: Psychological and sociological approaches. San Francisco: Freeman.

Enochs, L. G. & Riggs, I. R. (1993). The development and partial validation of microcomputer utilization in teaching beliefs instrument in a science setting. School Science and Mathematics, 93, 5, 257-263.

Fazio, R. P. & Keranen, K. (1995). Mapping a course with GIS. The Science Teacher, 62, 3, 17-19.

Hamilton, C. J. (1996). Views of the solar system [computer software]. Alexandria, VA: National Science Teachers Association.

Housego, B. (1992). Monitoring student teachers' feelings of preparedness to teach, personal teaching efficacy, and teaching efficacy in a new secondary teacher education program. Alberta Journal of Educational Research, 38, 1, 49-64.

Hoy, W. K. & Woolfolk, A.E. (1993) Teachers' sense of efficacy and the organizational health of schools. The Elementary School Journal, 93, 356-372.

Illinois State Board of Education. (2001). Clinton Rosette Middle School. Illinois School Report Card. Springfield, IL: Author.

Illinois State Board of Education. (1997). Illinois learning standards. Springfield, IL: Author.

Kelly, R. (2000). Working with WebQuests: Making the web accessible to students with disabilities. Teaching Exceptional Children, 32, 6, 4-13

Knowledge Revolution. (1997, fall). Knowledge Revolution Higher Education Solutions [catalog]. San Mateo, CA: Knowledge Revolution.

Milson, A. J. (2001). Exploring Latin America with WebQuests. Social Studies and the Young Learner, 14, 2, P1.

Milson, A. J. & Downey, P. (2001). WebQuest: Using Internet resources for cooperative inquiry. Social Education, 65, 3, 144-146.

North Central Regional Educational Laboratory. (1999). Meaningful, engaged learning. [Online] 9 paragraphs. Available: http://www.ncrel.org/sdrs/engaged.htm [2001, August 8]

Spanfelner, D. L. (2000). WebQuests, an interactive approach to the web. Community & Junior College Libraries, 9, 4, 23-28.

Summerville, J. (2000). WebQuests: An aspect of technology integration for training preservice teachers. TechTrends, 44, 2, 31-35.

Tinker, R. F. (1987). Educational technology and the future of science education. School Science and Mathematics, 87, 6, 466-476.

Tschannen-Moran, M, Hoy, A. W., & Hoy, W. K (1998). Teacher efficacy: Its meaning and measure. Review of Educational Research, 68, 2, 202-248

Author Note

Appreciation is extended to Verizon Corporation for funding supporting this project.

Table 1. Changes in Outcome Expectancy and Personal Efficacy as a Function of Course Section

	Pairwise Comparison				
	Section	Section	Mean Difference	Standard Error	Significance
Outcome Expectancy	Control	Experimental	1.1034 *	0.5363	0.314
Personal Efficacy	Control	Experimental	0.7346	1.0906	0.501

Note: * = significant at the 0.05 level

Table 2. Changes in Outcome Expectancy and Personal Efficacy as a Function of Time (Administration) for Control Section

	Control Section				
	Administration	Administration	Mean Difference	Standard Error	Significance
Outcome Expectancy	1	2	0.0747	0.8776	0.933
		3	-0.3704	0.8776	0.674
	2	1	-0.074074	0.8776	0.933
		3	-0.4444	0.8776	0.614
	3	1	0.3704	0.8776	0.674
		2	0.4444	0.8776	0.614
Personal Efficacy	1	2	2.2593	1.7716	0.206
		3	4.1481*	1.7716	0.022
	2	1	-2.2593	1.7716	0.206
		3	1.8889	1.7716	0.290
	3	1	-4.1481*	1.7716	0.022
		2	-1.8889	1.7716	0.290

Note: * = significant at the 0.05 level

Table 3. Changes in Outcome Expectancy and Personal Efficacy as a Function of Time (Administration) for Experimental Section

	Experimental Section				
	Administration	Administration	Mean Difference	Standard Error	Significance
Outcome Expectancy	1	2	0.3328	1.0155	0.744
		3	1.2023	1.0155	0.240
	2	1	-0.3328	1.0155	0.744
		3	0.8696	1.0461	0.409
	3	1	-1.2023	1.0155	0.240
		2	-0.8696	1.0461	0.409
Personal Efficacy	1	2	2.3077	2.0724	0.269
		3	1.9599	2.0724	0.348
	2	1	-2.3077	2.0724	0.269
		3	-0.3478	2.1349	0.871
	3	1	-1.9599	2.0724	0.348
		2	0.3478	2.1349	0.871

Note: * = significant at the 0.05 level

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