

Enhancing Students' Perceptions of Research in Educational Psychology Courses

Tesia T. Marshik, Ph.D.
University of Wisconsin-La Crosse



ABSTRACT

Research suggests that many students have misconceptions about psychology and question its legitimacy and importance as a science but these perceptions can be modified through instruction. The purpose of the present study was to examine the extent to which students' beliefs about psychology, their efficacy for consuming psychological research, and their perceptions of the relevance of psychology to teaching changed as a result of completing a research application project in an educational psychology course. Data was collected from 86 students in two educational psychology courses, one which utilized the project and the other which served as a comparison group. Students who completed the research project had higher efficacy, felt more comfortable reading research articles, and rated psychology research as more relevant to teaching at the end of the semester compared to students in the comparison group. Furthermore, students' perceptions of psychology as a science increased after completing the research project but not for those students in the comparison group. Students who completed the research project also significantly improved in their abilities to critically analyze research articles over the course of the semester.

INTRODUCTION

- In recent decades, there have been increased calls for teaching practices to be rooted in scholarly, empirical research. With new policies and increased accountability, teachers likely benefit from being trained on how to interpret and conduct educational research (Babkie & Provost, 2004). As such, courses grounded in educational and developmental psychology research are integral parts of teacher education programs.
- However, research suggests that many undergraduate students have misconceptions about psychology, question its legitimacy as a science, and view the contributions of psychological research as being less important than other sciences (Amsel, Johnston, Alvarado, Kettering, Rankin & Ward, 2009; Bartels, Hindd, Glass & Ryan, 2009; Friedrich, 1996; Janda, England, Lovejoy, & Drury, 1998).
- Research also suggests that students' perceptions of psychology as a science can be enhanced through exposure and participation in psychology courses (Friedrich, 1996; Amsel, Baird, & Ashley, 2011).
- However, there is a lack of research on pre-service teachers' perceptions of psychology research and their abilities to interpret such research.
- The purpose of the present SOTL inquiry was to examine the extent to which an educational psychology course with a research application project enhanced students' perceptions of psychology as a science, their efficacy for understanding and applying psychological research, their perceptions of the value of psychology research to teaching, and their abilities to critically analyze research articles.

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METHOD

Participants

Data was collected from two educational psychology classes at a medium-sized, public, liberal arts University in the Midwest. One of the main differences between the courses was that the primary author incorporated a structured annotated bibliography project, which gave students direct practice reading summarizing, critiquing and applying psychological research to an educational setting. As such, this was considered to be the experimental section and the second section served as a comparison group. The final sample consisted of 86 students (37 in the experimental classroom, and 49 in the comparison classroom). Most of the participants were females (70%) between the ages of 19 and 28 years ($M = 20.91$, $SD = 1.38$) and primarily education majors (86%).

Measures

- Psychology as a Science Scale (PAS; Friedrich, 1996)
- Perceptions of the Relevance of Psychology to Teaching (PAT)
- Efficacy for Understanding and Critiquing Research Articles and Applying Results
- Reading of Research Articles (Current and Future intentions)
- Comfort with Reading Research Articles
- Research Article Analysis (modeled after Bachiochi et al., 2011)

Procedures

At the beginning of the semester, students in both classes were informed that their instructors were conducting research on students' beliefs about psychology research. In the experimental section, the data was collected through reflective class activities and assignments that were already part of the course, but students had the option of consenting to allow us to use their data for research purposes. In the comparison section, students were granted extra credit for their participation. All survey data was collected anonymously using student-generated codes. Time 1 data was collected during the first week of classes and Time 2 data was collected during the last week of classes.

RESULTS

Independent Samples t-tests (Experimental and Comparison Groups)

At the beginning of the semester, the only significant difference was in students' comfort level reading research articles, with students in the comparison group reporting feeling slightly more comfortable ($M = 3.95$, $SD = 1.50$) than students in the experimental group ($M = 3.50$, $SD = 1.21$), $t(78) = 3.11$, $p = .003$. At the end of the semester, students in the experimental group reported higher efficacy, rated psychology as being more relevant to teaching, and reported feeling more comfortable reading research articles than students in the comparison classroom. Descriptive statistics for the post assessment are presented in Table 1.

Paired Samples t-tests (pre- and post- comparisons)

For the experimental group, the results indicated that students' efficacy for reading research articles, perceptions of psychology as a science, comfort reading articles and intentions for reading research articles were all significantly higher at the end of the semester compared to the beginning of the semester. Students in the experimental group also significantly improved in their ability to critically analyze a research article. In the comparison group, only students' efficacy, comfort, and intentions for reading increased from the beginning to the end of the semester.

RESULTS cont'd

Table 1. Independent Samples t-test comparisons of time 2 assessments

	Experimental Classroom		Comparison classroom		<i>t</i>	<i>df</i>	<i>p</i>
	M	SD	M	SD			
PAS	80.56	9.02	78.00	7.79	-1.19	62	.24
PAT	55.45	6.08	52.22	6.25	-2.07	62	.04
Efficacy	26.35	3.94	21.22	5.77	-4.23	62	<.001
Reading	13.54	3.57	13.74	3.37	.24	62	.81
Comfort	5.47	.91	4.52	1.16	-3.62	60	.001

Table 2. Paired samples t-test comparisons of time 1 and time 2 assessments

Class	Measure	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Comparison	Efficacy 1	17.08	6.65			
	Efficacy 2	21.08	5.73	-4.01	24	.001
	Reading 1	8.92	3.23			
	Reading 2	13.72	3.40	-8.27	24	.00
	Comfort 1	3.95	1.50			
	Comfort 2	4.54	1.18	-2.75	21	.01
Experimental	PAS 1	75.12	9.17			
	PAS 2	80.32	9.15	-3.61	33	.001
	Efficacy 1	18.09	5.20			
	Efficacy 2	26.15	4.03	-8.52	33	.00
	Reading 1	8.26	2.85			
	Reading 2	13.44	3.35	-7.36	33	.00
	Comfort 1	3.50	1.21			
	Comfort 2	5.49	.94	-8.05	33	.00
	Analysis 1	3.37	1.24			
	Analysis 2	6.88	1.26	-14.75	33	<.001

DISCUSSION

- In sum, both educational psychology courses helped to increase students' efficacy, comfort, and intentions to read psychology research.
- But students who completed a complex annotated bibliography project in the experimental classroom also increased their perceptions of psychology as a science, and had higher levels of efficacy and comfort reading research articles, greater intentions to read psychological research, and higher perceptions of the value of psychology research to teaching at the end of the semester.
- Furthermore, students who completed the research project also improved in their abilities to critically analyze a research article, providing some evidence that the project itself is useful for this learning objective.
- Directions for future research:
 - Collect data to compare outcomes at mid-semester (e.g., do efficacy and perceptions of psychology initially dip/decrease somewhat as students are learning and practicing their analysis skills?)
 - Given that PAT did not significantly increase over the semester, explore ways to further convince students of the value of psychology research to teaching. Perhaps more than one educational psychology class is needed, or original research articles should be more fully and obviously incorporated into other teacher education courses.
 - Explore qualitative data regarding pre-service teacher' perceptions of psychology and challenges with the annotated bibliography project.
 - Conduct independent samples t-test to compare end-of-semester article analysis scores between the experimental and comparison class (in process).