

Self-Reported Research Skills Changes and Course Outcomes in a Senior Research Psychology Course

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Abstract

Psychology students (N=71) completed a research skills assessment test before and after completion of a senior research course. As predicted, student ratings for each of the 14 research skills measured increased. Reported course effort, enjoyment, and knowledge gained correlated positively with increased research skills. Implications for assessment are discussed.

Introduction

Research methods courses are part of the regular curriculum in undergraduate psychology programs around the world. Although the specifics of the class offerings and the methods of assessing student performance in these courses vary, it has become increasingly important to provide evidence of increased student research skill outcomes upon completion of these types of courses to meet university assessment and accreditation requirements (APA, 2009).

Undergraduate research methods courses, and working with faculty members on research in these courses, is a very powerful instructional tool and effective way to increase research skills. However, research methods courses require a high amount of faculty's time and commitment as well as a sizeable amount of funding. Therefore, it is important to determine the actual value of research methods courses (Kardash, 2000).

Studies have demonstrated the usefulness and success of such research courses and how to improve and expand students' research skills. Kardash (2000) studied undergraduates completing a summer or semester long internship under the supervision of a faculty mentor. The students worked with the faculty advisors on hands on research experiments. At the end of the internship, the students presented their research at conferences and made posters for presentation at their campus. Students were given a questionnaire that assessed their research skills at the beginning of the internship as well as at the end of the internship. Research skills improved from beginning to end of the internship based on the students' perceptions of their research skills. This study shows support and evidence of the usefulness and effectiveness of research method courses (Kardash, 2000).

Current Study Hypotheses

The current investigation was designed to examine how student self-perceptions of their research skills would change upon completion of a senior level research methods course. We predicted that students would indicate an improvement in their research skills from the beginning to the end of the course. We also predicted a positive relationship between an increase in research skills and self-reported enjoyment of the course, effort in the course, and knowledge gained in the course. Furthermore, students who obtained significant results in their research projects and student who anticipated were predicted to report more improvement in research skills due to their positive experiences with research.

Method

Participants

Seventy-one students from a medium sized, public university in the Southeastern United States enrolled in six unique sections of a required senior research course participated in the current study. The racial distribution of the sample included 81.7% Caucasian, 15.5% African-American, 1.4% Hispanic, and 1.4% Asian. The average age of the participants was 22.68 years ($SD=2.86$), and all of the participants were psychology majors. Most of the participants enrolled in the course were women (87.3%). The majority of the participants were seniors (90.1%), with the remaining 9.9% being juniors. Approximately half of the participants planned to graduate the semester they completed the study (49.3%).

Senior Research Course

The senior research course, Applied Research in Psychology (PSYC 497), is a psychology major requirement majors generally complete during their senior year. The course is a "research experience in which students are required to develop a research project, conduct a literature review, gather and analyze data, prepare a research paper in accord with the standards of the American Psychological Association (APA) and present their research." The instructor supervises the project and leads group instruction on topics related to research.

Materials & Procedure

Students completed a research skills test (Kardash, 2000) at the beginning and end of the semester. The research skills test was comprised of 14 Likert-style questions related to specific research skills typically developed during a research experience. Example research skill areas included understanding concepts in the field, using primary scientific research literature, formulating hypotheses, collecting data, statistically analyzing results, and communicating results. Participants rated their skills on each scale item using a 5-point Likert scale.

Participants also reported their anticipated course grade, whether they found significant results in their research project and whether they planned to follow-up on their study. They also rated their course effort, enjoyment of the course, and whether the course increased their research knowledge on a 10-point Likert scale.

Participant age, sex, class rank, and major were collected on a demographic questionnaire. Students were also surveyed about their plans to attend graduate school and the type of graduate program and degree sought.

Table. Descriptive Statistics for Perceived Course Outcomes

Questions (all answered on a 10-point Likert scale)	M	(SD)
How much effort did you put into the class?	8.92	1.10
How much did you enjoy the class?	7.69	1.62
How much has the class increased your research knowledge?	9.24	.98

Results

As predicted, the composite score of research skill ratings increased from the beginning to the end of the class, $t(70)=9.11, p<.001, d=1.56$.

Separately, each of the 14 research skill areas was rated higher at the end of the class than at the beginning, all $ps<.01$. Specific research skill area results are provided in the Figure.

Students reported positive course outcomes regarding their course effort, course enjoyment, and research knowledge gained from completing the course. These values are reported in the Table.

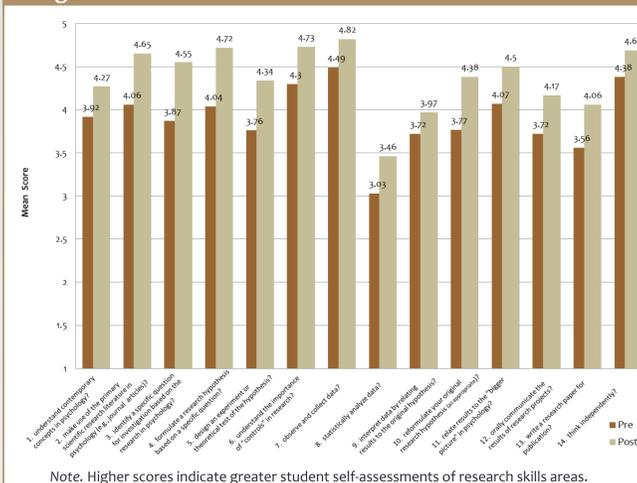
We were also interested in how student's self-perceived effort, enjoyment, and knowledge gained was related to changes in research skill ratings. Difference scores were calculated to examine student research skill rating changes from the beginning of the course to the end. Overall, there was a positive relationship between increased research skills and course effort, $r(69)=.29, p=.04$, enjoyment, $r(30)=.24, p=.04$, and knowledge gained, $r(30)=.25, p=.04$.

Approximately half of the participants' research projects did not yield statistically significant results (62%). Fifty-two percent of the participants intended to follow up on their research project. Forty-four percent anticipated a course letter grade of A, 52% B, and 4% C.

Interestingly, students who obtained significant results for their research and students who anticipated earning As in the course reported greater increases in research skill ratings scores than those who did not, but these differences were not statistically significant.

The majority of students planned to attend graduate school (84.5%), especially in clinical/counseling areas.

Figure. Mean Pre and Post Research Skills Assessment Scores



Discussion

As predicted, research skill ratings increased from the beginning to the end of the class, including all 14 areas assessed. Students felt more confident in their research skill abilities after participating in a course which required them to conduct their own original piece of research.

Similar studies have been performed on students' perceived research skills as well as their faculty mentor's views of their students' research skills (Kardash, 2000). Results showed that mentors and students' scores were very similar on the majority of specific skills measured on this particular scale.

Limitations of this research include a small sample size of predominately women, and the possibility that students did not fully comprehend the skill areas they rated.

Most undergraduate psychology programs require research methods courses and our selected measure of research skills (Kardash, 2000) may be useful for assessment purposes. Psychology programs may want to measure changes in research skills at multiple stages across the curriculum to follow growth and learning in students and to address program assessment. Specific skill areas may also be identified and emphasized as part of continuous quality improvement measures.

Our results suggest students enrolled in our senior research course believed their research skills improved after completing the course. Future investigations may also include professor assessments of student research skills, in addition to student self-assessments, as part of the course assessment.

Selected References

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