Research Participation Experience
Literature Review - I - 07/26/11

Summary.
Undergraduate students' research participation experience is discussed in the literature in the context of teaching psychology as a part of an introductory psychology course requirement or as an extra credit incentive.
The debate whether student participation provide educational benefits to students started as early as late 1960s with the vast majority of researchers agreeing that a lot could be done to improve the educational value of this experience. In 2003, Bowman and Waite provided empirical evidence to academic departments contemplating the establishment of a participant pool or evaluating the merit of having students participate in research activities that student participation is worthwhile.
Rossell et al.' (2005) study addresses the design limitation in Bowman and Waite's 2003 study and provides, after controlling for participants' prior knowledge of research procedures, further empirical justification for the use of introductory psychology participant pools as pedagogical tools.
Elliott et al. (2010) further indicate that students not only preferred experimental participation to classroom lectures, but that students learned as much about the psychological concept by participating in an experiment as they did by listening to a lecture.
The following articles discuss also several variables that affect participation (perception of coercion, knowledge of IRB procedure, constraints to participation, number of participations, participation for extra credit, etc...).

Although there is a large body of literature related to using subject pools in psychology introductory courses, I haven't find (at least yet) any application of such findings to business generally or marketing specifically.

Bowman and Waite (2003) – Teaching of Psychology - Volunteering in Research - Student Satisfaction and Educational Benefits

> Despite some views to the contrary (e.g., Coulter, 1986), researchers have found that students perceived participation to be a valuable learning experience (Britton, 1979; King, 1970; Landrum & Chastain, 1995).
>
> Moreland (1999) wrote that the majority of student research participants at his university reported having enjoyed participating in research projects, found participation to be educational, and had a fair to good understanding of the purposes of the projects.
>
> At our university, we found that students who participated in research had more positive perceptions of research and greater knowledge of the procedures associated with participant pool functioning than those who did not (Waite & Bowman, 1999).
>
> Based on our current findings and in conjunction with past research, we are able to make the following nine summary statements and suggestions to those who are setting up a participant pool or evaluating their participant pool mechanisms.
>
> 1. Participating in an out-of-class research experience is valuable.
>
> - We found that students who participated in at least one of the research options had more positive perceptions of psychology and research and better understanding of procedures associated with research participation than those who did not participate.

- Our research, like that of Landrum and Chastain (1995), suggests that out-of-class research contributes to understanding of psychology and in general is a valuable experience.

2. Volunteering as a research participant is most satisfying.

- Among those who did participate, participating as a volunteer in a research study was more satisfying than the mass testing or paper-writing options.
- Students who participated as a volunteer indicated that they understood more about psychology as a result of participating, participation increased their interest in psychology, and volunteering was rewarding.

Perhaps participating in the research studies gave students more opportunities to discuss specifics of the research with investigators or students believed they were making a contribution by being more engaged in the process.

3. Satisfaction relates to positive perceptions of psychology and research.
Finding suggests that participation may have a positive impact on attitudes toward psychology and research. For students who participated in the research option, satisfaction was positively related to perceptions of the researchers' behavior and understanding of rights.

4. Gender relates to participation, perceptions of psychology, and satisfaction.

- Women participated more, had more favorable perceptions of psychology and research, and were more satisfied with the paper-writing option.
- There were no differences between women and men in satisfaction with mass testing or the research participation option.

That women participated more and had more favorable perceptions of psychology and research and were somewhat more satisfied than men *gives credence to the idea that participation leads to more positive attitudes.*

5. Grade expected relates to participation and perceptions of psychology.

- Students who participated in any of the research options expected higher grades than those who did not participate.
- Students who expected higher grades had more favorable perceptions of psychology and research and were more satisfied with the mass testing option.
- Grade expected did not relate to satisfaction with the research participation option or with the paper- writing option.

It is reasonable to assume that those who participated more expected higher grades as a direct result of their participation as many received extra credit for participating.

6. Employment status relates to participation and satisfaction.

- Consistent with our past study (Waite & Bowman, 1999), students who participated in the research options were employed fewer hours.
- Employment status did not relate to perceptions of psychology and research. However, those who worked less (1 to 10 hr per week) were more satisfied with the research participation option, and those who worked the most (31+ hr per week) were least satisfied with the mass testing.
- No differences between employment status and satisfaction with the paper-writing option were obtained.

Reasons for these patterns are likely due to accessibility. Those who work less are more readily able to participate and attend the research and the mass testing sessions. The paper-

writing activity however, could be completed on one's own time, making this option equally attractive to everyone.

7. Major relates to perceptions of psychology and satisfaction, but not participation.

- Participation was not related to major. However, social science majors had more favorable perceptions of psychology and research. Students who are majoring in social sciences (e.g., psychology, sociology) presumably are more interested in these topics and thus would have more positive attitudes toward psychology and psychological research than non-social science majors.
- Social science majors did not differ from non-social-science majors in satisfaction with the research participation option or with the mass testing, but were more satisfied with the paper option.

8. Class size relates to satisfaction.

Participation was not related to class size, which differed from our past finding (Waite & Bowman, 1999) that students who participated were enrolled in larger classes. However, for each research option (participating in research projects, participating in mass testing, and writing a paper), class size was related to satisfaction. In general, students enrolled in larger classes (45+ students) were more satisfied with each of the three options than students enrolled in smaller classes.

9. Number of participation events relates to satisfaction.

- Consistent with Holmes (1967), the number of studies in which students participated was positively related to satisfaction with the research participation option. At first glance, it would appear that this relation might be a result of simple math; more participation is equal to more extra credit points. However, the number of papers written was not related to satisfaction with the paper-writing option.

Participating in more research studies may have afforded students more opportunities to discuss the research with the investigator, provided greater exposure to a variety of projects, or perhaps made students feel like they were more personally involved. Feelings of involvement could explain why greater participation levels related to more satisfaction in the research study option, but not for the paper-writing option.

As a result of our findings, academic departments contemplating the establishment of a participant pool or evaluating the merit of having students participate in research activities now have empirical evidence that student participation is worthwhile and information about variables that affect participation.

Bowman and Waite's (2003) article cited the following "selected" articles:

1- Holmes (1967) - JPSP - Amount of experience in experiments as a determinant of performance in later experiments

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2- King (1970) - AP - The Subject Pool

- Participation in an experiment was a valuable learning experience.
- The presence or lack of presence of an explanation of the purpose of the experiment is a major factor influencing whether or not serving as a subject

3- Britton (1979) - ToP - Ethical and Educational Aspects of Participating as a Subject in Psychology Experiments

- Subjects gave favorable ratings to the experience of participating in psychology experiments.
  Two alternative explanations are worth considering.
  One is that subjects gave high ratings because they believed the experimenters expected them to. An attempt was made to reduce the possible influence of such demand characteristics by ensuring anonymity for the students' responses, and by arranging tor the questionnaire to be completed away from the experimental situation *(In our case completed online).*
  The other explanation is that the experimenters were perceived as polite in their demeanor and informative in their explanation of the experiment, the experience was perceived as educationally valuable, and the subjects left feeling comfortable.

- Students in this study gave moderately positive ratings to the educational value of the experience.
  Although this is encouraging, it is evident that more could be done to improve the educational value. It may be useful to draw the subjects' attention to material from the textbook which is relevant to the experiment.

4- Coulter (1986) - AP - Academic Value of Research Participation by Undergraduates

Article findings cannot be taken conclusively because the data were haphazardly collected, but they do provide interesting material for further thought.

- A substantial number, when questioned about value, found the experience to be boring, irrelevant, and a waste of time. In a few cases, mostly with non-majors, students were angry about the requirement and expressed considerable contempt for the entire psychological research endeavor.
- No student that I surveyed could say anything intelligible about the experiment's purpose or design, although students who wrote papers usually (but not always) were able to extract some semblance of the required information from the experimenter.

Coulter suspected that insufficient debriefings were responsible for students rating research experiences as boring, irrelevant, and a waste of time.

5- Landrum and Chastain (1995) - IRB - Experiment Spot-Checks - A Method for Assessing the Educational value of Undergraduate Participation in Research

- Students agreed with statements indicating that participating helped them to learn about psychology and to understand research better, and students strongly agreed that they were treated fairly and with respect.
- They further indicated that participating in the experiment added variety to the course, and that the purpose of the experiment was adequately explained.
- Contrary to the findings of Coulter, our students (students in the General Psychology course at Boise State University) disagreed that the experience was a waste of time.

- Assessment instrument: 5 point Likert Scale
  1. I was treated fairly and with respect during research session.
  2. I learned about psychology by participating in a research project.
  3. The research experience is a good way to add variety to introductory psychology.
  4. I think that this research experience was a waste of time.
  5. I think that participating in this project helped me understand research better.
  6. The purpose of this experiment was adequately explained to me.

6- Waite and Bowman (1999) - Book Chapter - Research Participation Among General Psychology Students at a Metropolitan Comprehensive Public University

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7- Moreland (1999) - Book Chapter - Evaluating Students' Research Experiences via Credit Slips.

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Bowman and Waite's (2003) article has been cited by the following articles:

1- Rossell et al. (2005) - ToP - The Pedagogical Value of Experimental Participation paired with Course Content

As Bowman and Waite (2003) suggested, the design of their study left doubt as to whether students who participated in research had more knowledge of research procedures prior to their participation in the experiments.
This study used a repeated measures design to further investigate Bowman and Waite's (2003) finding that research participation increased knowledge of research procedures.
Introductory psychology students completed the survey three times throughout the semester: during the first week (prior to both explicit class instruction on the breadth and scientific rigor of contemporary psychology and research participation), during the fifth week (after explicit class instruction on the scientific nature and research methods of contemporary psychology, but before students participated in actual research), and during the final week of class (after students completed their research requirement).

Students' understanding of contemporary psychology and research procedures improved across the term. Findings indicate that students' increased understanding of psychological research procedures may be due to their participation in research in addition to course content.

This study provides further empirical justification for the use of introductory psychology participant pools as pedagogical tools.

2- Trafimon et al. (2006) - ToP - FF - Introductory Psychology Students' Perception of Alternatives to research Participation

- Students perceived research participation to be more positive than writing the alternative paper.
- Slightly more than half of the participants thought that the paper would be more effortful and more time consuming than the experiment, which supports the notion that this particular alternative to research participation might involve some level of coercion. However, when asked what they would choose assuming that the paper and the experiment would be equally effortful and time consuming, the vast majority of students chose the experiment anyway.

3- Darling et al. (2007) - PLT - Learning About The Means to the End - What US Introductory Psychology Students Report about Experimental Participation

Previous research has shown that when asked to rate their agreement with statements regarding their attitudes towards participation in psychological experiments, students reported that their participation was of educational value (e.g. Bowman & Waite, 2003; Landrum & Chastain, 1995).
The authors investigated what kinds of learning experiences students would report when prompted with open ended questions regarding their participation.

Four open ended questions asked how seriously participants took the research experience, what participants gained from studies, what were commonalties among the studies and how their classroom experience helped with understanding the experiments.
In addition to reporting that they took their participation seriously, students reported that they learned not only about psychological content but also about the process of conducting psychological research.

4- Kalkoff et al.(2007) - Book Chapter -Laboratory experiments in the social sciences: Human Participants in Laboratory Experiments in the Social Sciences

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5- Sullivan and Lashley (2009) - ToP - Developing Informed Research Participants in an Introductory Psychology Participant Pool

- The importance of providing practical research experience for undergraduate students has most recently been reaffirmed by the American Psychological Association (APA) Board of Educational Affairs guidelines for psychology majors (APA, 2007).
- A recent survey of psychology departments affirmed the field's general support of the Board's statement by revealing that 98% of departments provide students with opportunities to conduct research as part of coursework (Perlman & McCann, 2005).
- Further analysis of the nature of these research opportunities showed that whereas some of these experiences rely on students working with computer simulations (16%) or preexisting data (20%), many more involve gathering data from people other than one's class members (63%). Thus, for each student learning how to conduct research, a number of other students are learning about research from the perspective of a participant.

6- Thieman et al. (2009) - ToP - Introducing Students to Psychological Research - General Psychology as a Laboratory Course

Integrated weekly laboratory to focus on research methods as part of a general psychology course.
Laboratory projects significantly increase students' knowledge and comfort level with scientific approaches and concepts, sustain interest in psychology, and increase critical thinking about psychological research.
Implementing a laboratory component in the introductory course increases students' scientific literacy, reinforces psychology's claim to scientific status, encourages active learning, promotes quantitative reasoning, and benefits multiple constituencies.

7- Elliott et al. (2010) - ToP - Research Participation versus Classroom Lecture - A Comparison of Student Learning

Previous literature has focused on students' perceptions of participation in experiments, but has not measured the effect of participation on learning.
Many researchers have found that students rate the educational value of research participation as low (Britton, 1979; Landrum & Chastain, 1995; Nimmer & Handelsman, 1992).
Students may prefer to participate, but students might not be learning.

In Study 1, students rated their perceptions of learning about psychology; they compared the classroom experience to experiment participation, reading about psychology, or summarizing a journal article.
In Experiment 2, students either participated in an experiment or listened to a lecture on the experiment's concept.
Results indicate that students not only preferred experimental participation to classroom lectures, but that students learned as much about the psychological concept by participating in an experiment as they did by listening to a lecture.
Our findings, in combination with previous research on perceptions of coercion, suggest that

- (a) Evidence does not indicate that students found experiments to be coercive (e.g., Trafimow et al., 2006).
- (b) Students believe that they learn more from experiments than from lectures (Study 1).
- (c) In at least one direct test of learning, both modalities resulted in approximately equal levels of learning (Experiment 2).

8- Elicker et al. (2010) - ToP - Research Participation for Course Credit in Introduction to Psychology - Why Don't People Participate

Psychology courses often include an experiential component whereby instructors require or allow students to participate in research or an equitable alternative activity for course credit.
We investigated self-reported reasons why students chose to not participate in research, in spite of the potential incentive of earning extra credit. Our sample of Introduction to Psychology students indicated time and scheduling conflicts and motivational issues as the 2 main reasons for not participating. We discuss implications for researchers and instructors.

9- Sacco and Bernstein (2010) - ToP - A Video Introduction to Psychology - Enhancing Research Interest and Participation

- Students who viewed a video about ongoing research at our university reported greater interest in research and completed more research participation hours than did students who did not view the video.

Other Related Articles

1- Leak (1981) - ToP - Student Perception of Coercion and Value from Participation in Psychological Research

Overall, the subjects viewed their prior research participation in a positive manner. They claimed it was worthwhile, contributed to their knowledge and interest in psychology, has scientific merit, and had adequate debriefings.

2- Nimmer and Handelsman (1992) - ToP - Effects of Subject Pool Policy on Student Attitudes toward Psychology and Psychological Research

- Attitudes towards 1) experiments, 2) psychology, and 3) learning value of experiments were more positive under the semi-voluntary (extra credit) than under the mandatory policies (required participation), although this was true only at the beginning of the semester for attitudes towards psychology and only as a trend for attitude toward psychological experiements.
- Attitudes toward psychologicl experiments become more positive as a result of participation.
- But judgement of the learning value of experiments became less positive after participation.

3- Padilla-Walker et al. (2005) - ToP- Extra Credit As Incentive for Voluntary Research Participation

Making the case for required research participation as opposed to providing extra credit incentives (and pointing to the got feelings we had about the value of these incentives.

- Might not meet educational goals: a large proportion of students at large universities are not taking advantage of the research participation's educational opportunity when it is offered as extra credit, which might suggest value in requiring participation in research in an effort for students to more clearly understand the scientific process inherent in psychology.
- Limitation to Findings: Extra credit incentives appeal to those who score high on measures of academic performance. Thus, participation might limit the generalizability of research findings.

4- Flagel et al. (2007) - JERHRE - Perception of Stress among Student Participating in Psychology Research - A Canadian Survey.pdf

- Overall, these results suggest that research participation is perceived as a useful learning experience. Students reported that they served as research participants for a variety of reasons (interest in research area, help the researcher).
- Although the majority of the students understood the principles of informed consent, many reported no knowledge of the process of ethical review.

5- Witt et al. (2010) - PID - Timing and Selection Effects within a Psychology Subject Pool - Personality and Sex Matters

- Researchers using psychology subject pools need to think carefully about the participants in their studies. Psychology students are not likely to be representative of all students at a given

university and different kinds of students are likely to participate at different times in the semester.

- The mode of data collection (online versus in-person) might also introduce selection biases. The bottom line is that there are indications of selection effects in participant pool samples and these effects may limit the generalizability of findings.

6- Moyer (2011) - JERHRE - Strenphening The Educational Value of Undergraduate Participation in Research as Part of a Psychology Department Subject Pool

Assignemts asking students to write about their research participation may enhance its educational mission in that:

- It encourages students to try to understand and remember aspects of the studies they take part in.
- It sends the message that the instructors expect students to learn something - not only to facilitate research activities.