

Student Responses To Persuasion: Motivations For Engaging In Research Outside The Sciences At A Teaching- Intensive University

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INTRODUCTION

With a continuing move towards “differentiated” universities (expanding to both teaching-intensive and research-intensive) (BC Ministry, 2008; Fram & Lau, 1996; Higher Education, 2010) there has been a fear that academic research might fall by the wayside in institutions considered “teaching-intensive” (Canadian Research, 2011; Jenkins, Breen, Lidsay & Brew, 2002; Vajoczki, Fenton, Menard & Pollon, 2011). There is a continuing need to investigate methods for insuring that an undergraduate education includes learning how to conduct research across all disciplines and programs. To do this we need to first ask, what would motivate a student to engage in research when attending a teaching-intensive university; and second, understand how to incorporate salient motivations into materials aimed at promoting student engagement in research.

MOTIVATION IN THE CONTEXT OF POST-SECONDARY EDUCATION

In the context of post-secondary education, a number of scholars (Lei, 2010; Pan & Gauvain, 2012; Varma & LaFever, 2006) have posited findings about motivations for learning, along with the factors that match teaching techniques with student success and satisfaction. However, studies that investigate the use of persuasive, motivational messages for engaging students in specific activities (Clary, et al, 1994; Gelona, 2011) and/or accounting for changes in motivation across time (Pan & Gauvain, 2012; Varma & LaFever, 2006) are scarce.

While the general categories of intrinsic and extrinsic motivation have been defined fairly well (Vallerand & Bissonette, 1992; Volet, 2001; Williams & Ivey, 2001), the current project uses a more precise categorization developed by Varma & LaFever (2006) based on six motivation variables: a) intrinsic-self (personally satisfying); b) intrinsic-social (supports personal values); c) intrinsic-economic (perceive as easy); d) extrinsic-self (useful skill); e) extrinsic-social (impress others); and f) extrinsic-economic (tangible reward). The original project for which Varma & LaFever (2006) developed this six item coding scheme focused on state motivations to study computer science. In that research, gender differences in motivation, and changes in motivation across time were found to be significant. Therefore in this current project we felt it was appropriate to look for similar differences in motivations in relation to students learning about and engaging in research.

According to research by Clary et al. (1994), “persuasion will be most effective when messages are tailored to appeal to the specific functional motivations of individual recipients of these messages (p. 1143).” Therefore knowing how various motivational messages appeal to students is essential. Using Varma and LaFever’s (2006) framework we constructed persuasive messages related to the promotion of research opportunities and asked for student responses to answer the following research questions:

- RQ1:** Is there a relationship between self-identified student goals and choice of motivational statements?
- RQ2:** Is there a relationship between year of study and motivations for engagement in research?
- RQ3:** Is there a relationship between gender and motivations for engagement in research?

METHOD

The participants in the present study were students at a teaching-intensive university. The data for this study was gathered during one academic year from September 2012 through April 2013. Total sample size was 255, which included 155 female and 100 male participants. The respondents were spread across four levels (years) of study, designated by number of credits completed: 0-30, 31-60, 61-90 and 91-120, with 57, 78, 58, and 62 students respectively. The sample was culturally diverse with representation mirroring the research site (City-data, 2010; Facts and figures, 2012). Additionally, the questionnaire was administered in courses based in the Faculty of Arts and Humanities, and the Faculty of Professional Studies. Faculties in the sciences were excluded from this research because there is already a strong culture of research in the disciplines represented there.

Results

To answer the first research question, self-identified goals were measured against years 1, 2, 3, 4 and after eliminating items so that no more than 20 percent of the expected frequencies in the table were less than five (5), a chi-square analysis (alpha value of .05) of self-identified goals and year of study (Figure 1) confirmed that a significant relationship existed between year of study and the goals: extrinsic-economic (tangible reward) and extrinsic-self (useful skill) ($\chi^2=11.021$, 3 df, $n=201$, $p=.012$). These two goals as top choices remained consistent across lower and upper-division years. (Figure 2). However, there was a measurable change in that extrinsic economic was chosen by 55.3 percent of respondents in the lower years but dropped to 37.6 percent in the upper years, while extrinsic-self remained fairly constant, moving slightly upward from 31.1 percent to 36.8 percent. This shift was also illustrated by the fact that overall intrinsic motivations increased in the upper years, going from 13.6 percent to 24 percent.

Figure 1: Year and self-identified goal

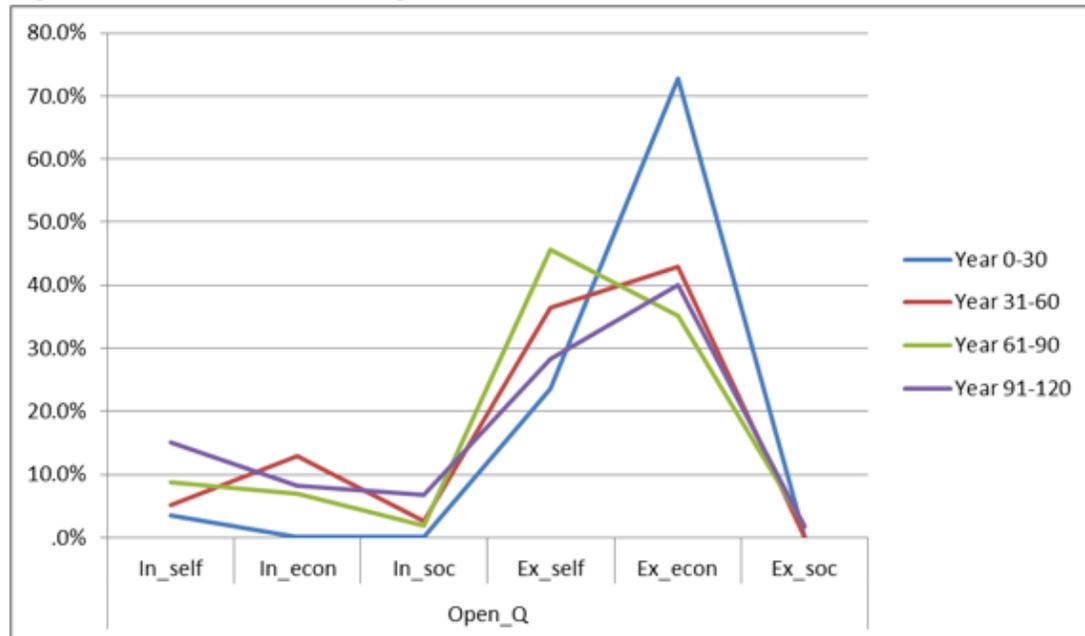


Figure 1. In this graph year of study is compared with a student’s self-identified goal.

Figure 2: Year and self-identified goal

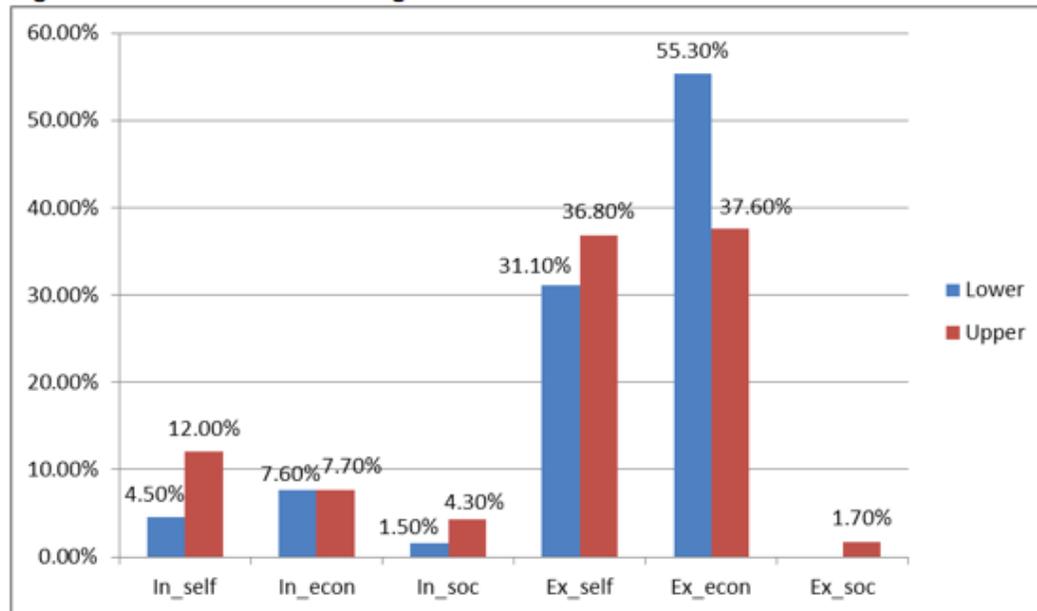


Figure 2 This graph shows the similarities and differences between lower-division and upper-division years compared with self-identified student goals.

Both females and males were consistent in ranking career related extrinsic motivations high. However, in self-identifying goals, females included intrinsic motivations 22.5 percent of the time while males named intrinsic motivations only 12.2 percent of the time (Figure 2). A chi square test of independence demonstrated a significant relationship between gender and motivations chosen by students as the three most important. The analysis (alpha value of .05) of top three goals and gender confirmed that a significant relationship existed between gender and the goals: intrinsic-self ($\chi^2=5.352$, 1 df, n=255, p=.021) and intrinsic social ($\chi^2=3.973$, 1 df, n=255, p=.046). Only 27 percent of females, compared to 41 percent of males chose intrinsic-self (personally satisfying) as one of their top three goals while 72.9 percent of females, compared to 61 percent of males, chose the motivation intrinsic-social (fits with personal values) as one of their three most important motivations for engaging in research.

CONCLUSION

The study found that both gender and year of study have an impact on what motivates students outside the sciences to be interested in participating in primary research. Heuristically, students at a teaching-intensive university want to come out with a job (tangible reward) and specific skills (utilitarian), and involvement in research is of interest if the research can leverage these two goals. Our findings demonstrate that the idea of what university is all about begins to shift almost immediately, especially for females, to be more focused on engaging in activities that are more appealing to their internal motivations.

Based on these findings, researchers should design both research projects and promotional materials by thinking about attracting students from the very beginning of their university experience, and through creation of messages that encourage both females and males. This knowledge can also help instructors to think more broadly about involving students in a variety of research related activities including class assignments, co-authorship, creation and attendance at conferences, community projects, service-learning, involvement across disciplines, gaining a variety of related skills outside of class, and generally encouraging activities that can be included in a student’s co-curricular record.

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Figure 3 Gender and top three motivations

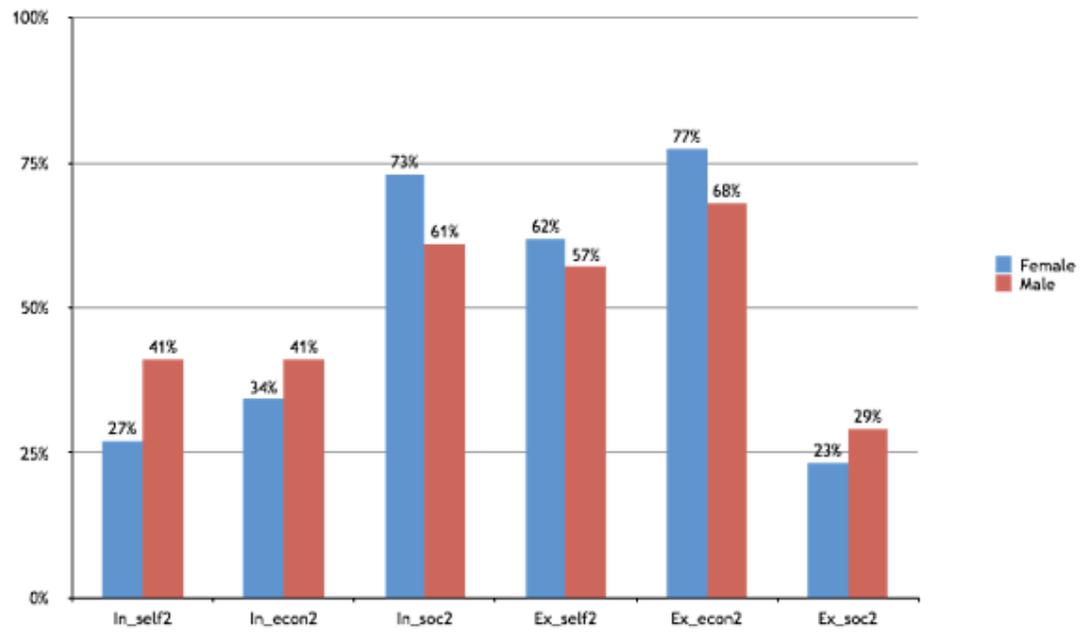


Figure 3 Gender does have an impact on student motivations.