Learning Strategies and Motivation of Graduate Students: Is Gender a Factor?

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Abstract

Previous research has suggested conflicting implications of gender differences in motivation, academic performance, and learning strategies. This research investigated study strategies and motivation of post-graduate students at a South-Eastern University. The Motivated Strategies for Learning Questionnaire (MSLQ) was administered. 2 X 6 Mixed ANOVA and 2 X 9 Mixed ANOVA were conducted to examine differences between male and female students with regard to motivation and learning strategies. No statistically significant difference was found between male and female post-graduate students. However, the students reported differences across the dimensions, such as extrinsic goal orientation, test anxiety (motivation), effort regulation, and peer learning (learning strategies).

Introduction

Self-regulated learning is "an effort to deepen and manipulate the associative network in a particular area and to monitor and improve that deepening process (Corno and Mandinach, 1983, p. 95); an integrated learning process, which consists of the development of constructive behaviors affecting learning (Zimmerman, 1989); "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment" (Pintrich, 2000, p. 453). Zimmerman (1986) asserts that students' self-regulation can be described to the degree that they are active in their own learning process in terms of metacognition, motivation, and behavior. It emerges mostly through students' self-generated thoughts, feelings, behaviors, and strategies that are oriented towards attaining goals (Schunk and Zimmerman, 1998) and includes cognitive processes such as attention to instruction, processing and integration of knowledge, information rehearsal, and self-efficacy (Schunk, 1988).

Researchers have found that students' confidence in their self-regulated learning strategies is related to academic self-concept, self-efficacy, value of school and school subjects, achievement goals, and academic performances, while it is negatively correlated with academic-anxiety and subject-specific anxiety (Pajares, Miller, & Johnson, 1999; Pajares, Britner, & Valiante, 2000; Pajares & Valiante, 2001). Schunk and Zimmerman (1994) stated that self-regulated learners are usually active learners who efficiently manage their own learning experiences in many different ways. They deploy

a wide range of cognitive and metacognitive strategies when accomplishing tasks. Self-regulated students possess adaptive learning goals, attaining of which they exhibit persistence in their efforts (Schunk, 1994; Pintrich & Garcia, 1991). Zimmerman (1990) suggests that self-regulated learners are independent, motivated, and metacognitively active participants in their own learning.

Whether gender is a factor in self-regulated learning and motivation has been investigated over the years. To illustrate, Wolters and Pintrich (1998) reported statistically significant gender differences with respect to motivation and cognitive strategy use dimension but not in regulatory strategy use or academic performance. The findings were similar to the findings of Bridgeman and Lewis (1996), who found difference favoring male students in academic performance, and Ereckson (1992), who reported difference favoring female students in college settings. In addition, Miller, Finley, & McKinley (1990) stated that there is a relationship between gender and learning styles, approaches, and motivation, in which reported that women are more intrinsically motivated strategic and organized in their learning and integration of new information compared to men.

Bembenutty (2007) investigated gender differences in academic achievement and learners' use of self-regulation of learning and suggested that males had lower rehearsal scores than females. It was also reported that male students had less frequent use of organizational strategies than females.

Yukselturk and Bulut (2009) analyzed gender differences in self-regulated learning components, motivational beliefs, and achievement in self-regulated online-learning environments and suggested that test anxiety was a significant factor in female students' achievement and self-efficacy for learning and performance as well as task value were significant factors in male students' achievement. Their research reported no statistically significant gender differences in terms of motivation, self-regulation, and achievement.

Walter, Stefanou, Stolk, Prince, & Lord (2011) investigated how pedagogy and gender of the instructor and affected the development of self-regulated learning strategies measured by MSLQ and indicated that compared to female students, male students were more likely to believe that their efforts to learn would have positive outcomes. The researchers also asserted that students reported positive responses for courses of the same gender and that male students responded more positively to courses that were project and problem-based.

This research examined differences between male and female graduate students in terms of motivation and learning strategies at a southeastern university. It was the intention of the researchers to investigate whether male students responded more positively to any of the dimensions of motivation and learning strategies measured by

Motivated Strategies for Learning Questionnaire (MSLQ), (Pintrich, Smith, Garcia, & McKeachie, 1991).

Methods

Participants

A total of 139 students, 40 male (28.8 %) and 99 female (71.2 %) participated in this study. The participants were post-graduate students taking education classes. 123 (88.5 %) identified themselves as African-American, 12 (8.6 %) as Caucasian, and 3 (2.2 %) as Other. The criteria for the selection of students were: at least 19 years of age and enrolled in an education course.

Instrumentation

Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991) was administered to students to capture a measure of their study strategies and motivation. The students were instructed to respond using a 7-point scale (1= not at all true of me to 7= very true of me). MSLQ consists of demographic information, motivation scales (intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning and performance, text anxiety; and learning strategies scales (rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment management, regulation, peer learning, and help seeking.

Procedure

Faculty members teaching education courses were contacted through telephone and office visits to grant permission to recruit their students during regularly scheduled meetings. Granted with the permission, researchers visited their classes to explain the scope of their study and share the information consent with the students. The students who volunteered to participate in the research filled out MSLQ. Motivation and study strategies were measured by MSLQ.

Results

To investigate whether there is a statistically significant difference between male and female post-graduate students' motivation, 2 X 6 Mixed ANOVA was performed. Mixed ANOVA results yielded no statistically significant interaction effect (p > .05), but a significant main effect for motivation, $F_{(5, 128)} = 81.51$, $p < .001$, $\eta^2 = .76$. Figure 1 shows the Figure 1 shows the motivation scores of male and female students.

Figure 1

Estimated Marginal Means of Motivation
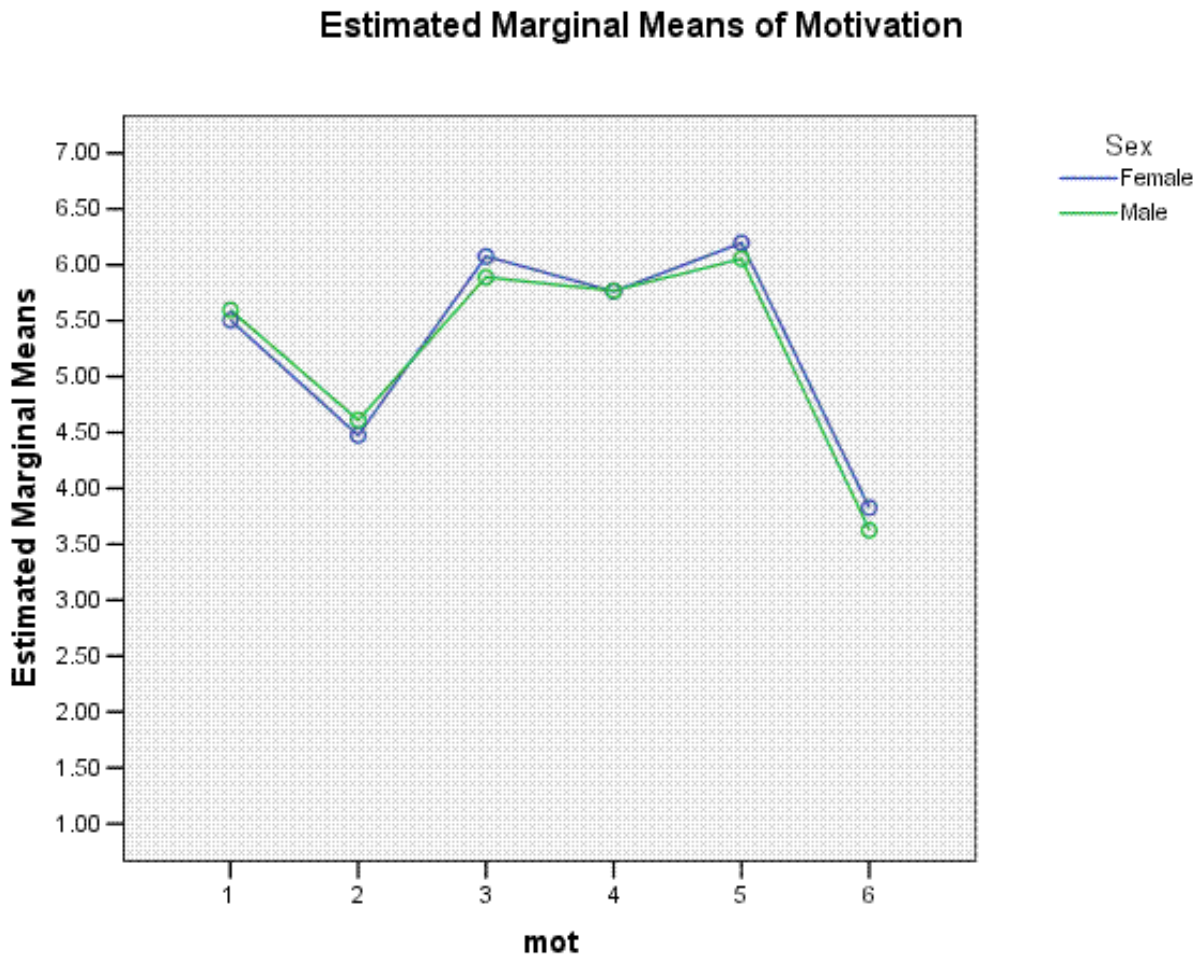
In addition, 2 X 9 Mixed ANOVA was performed to examine any statistical significance between male and female students with regard to learning strategies. The results yielded no statistically significant interaction effect ($p > .05$), but a significant main effect for learning strategies, $F(8, 126) = 11.745$, $p < .001$, $\eta2 = .43$. Figure 2 shows the Figure 1 shows the learning strategies scores of male and female students.
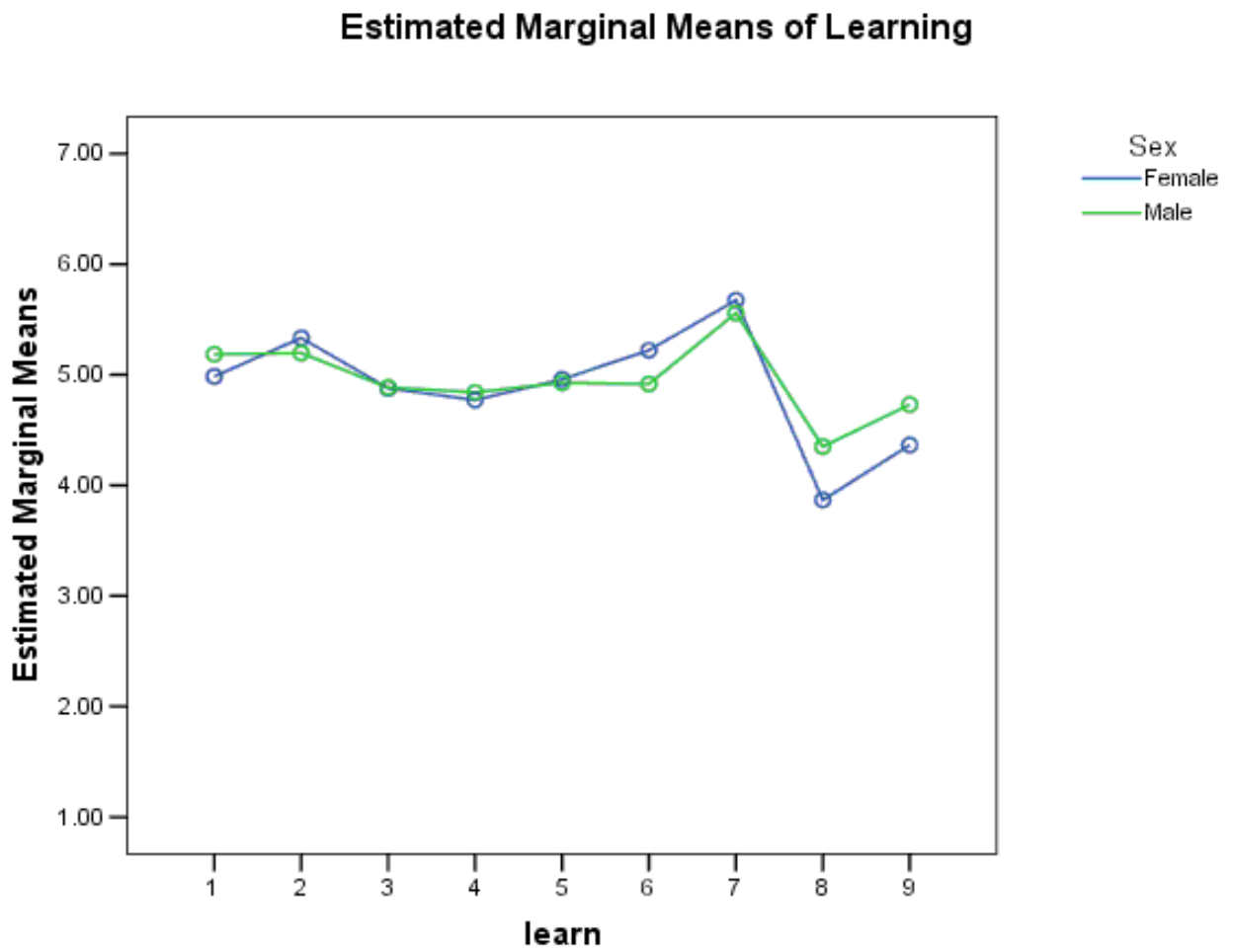
Figure 2

Table 1 displays the motivation and learning strategies subscale mean scores, and Table 2 displays the reliability estimates for the original MSLQ and the current study.

Table 1

Male and Female Scores of Motivation and Learning Strategies

Dimension	Male M (SD)	Female M (SD)
Motivation		
Intrinsic Goal Orientation	5.02 (1.106)	5.21 (1.235)
Extrinsic Goal Orientation	6.00 (.936)	5.82 (1.273)
Task Value	5.36 (.947)	5.63 (1.088)
Control of Learning Beliefs	5.51 (.931)	5.52 (1.025)
Self-Efficacy for Learning & Performance	5.93 (.875)	6.00 (1.025)
Test Anxiety	3.71 (1.348)	3.46 (1.529)
Learning Strategies		
Rehearsal	4.93 (1.024)	5.30 (1.116)
Elaboration	4.80 (1.138)	4.97 (1.276)
Organization	4.48 (1.240)	4.57 (1.367)
Critical Thinking	4.55 (1.178)	4.81 (1.242)
Metacognitive Self-Regulation	4.67 (.898)	4.87 (.915)
Time and Study Environment		
Management	4.77 (.911)	5.11 (.862)
Effort Regulation	4.94 (1.076)	5.25 (1.164)
Peer Learning	4.26 (1.497)	3.92 (1.710)
Help Seeking	4.57 (1.362)	4.81 (1.162)

Table 2

Summary of Reliability Estimates for MSLQ

Dimension	# items	Cronbach's alpha (C)	Cronbach's alpha (O)
Motivation			
Intrinsic Goal Orientation	4	.53	.74
Extrinsic Goal Orientation	4	.63	.62
Task Value	6	.78	.90
Control of Learning Beliefs	4	.41	.68
Self-Efficacy for Learning & Performance	8	.83	.93
Test Anxiety	5	.76	.80
Learning Strategies			
Rehearsal	4	.71	.69
Elaboration	6	.81	.75
Organization	4	.69	.64
Critical Thinking	5	.78	.80
Metacognitive Self-Regulation	12	.67	.79
Time and Study Environment			
Management	8	.71	.76
Effort Regulation	4	.55	.69
Peer Learning	3	.77	.76
Help Seeking	4	.49	.52

Reliability analysis yielded satisfactory internal consistencies for each of these dimensions, ranging from .53 to .83. Except for intrinsic goal orientation, self-efficacy for learning and performance, effort regulation, and help-seeking, the coefficients in the current study were comparable to the values in the original study of MSLQ.

Discussion

This study investigated whether gender had an impact on the motivation and learning strategies used by post-graduate students at a southeastern university. No statistically significant difference was found between male and female students in their motivation or learning strategies. However, regardless of gender, graduate students showed differences in extrinsic goal orientation, test anxiety (motivation) and effort regulation and peer learning (learning strategies). Sample size is a limitation of this research, so further studies can investigate the impact of gender with regard to

motivation and learning strategies using a bigger sample size. Due to the sampling method of this research, generalization to the population cannot be made.

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