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### College students' academic motivation: Differences by gender, class, and source of payment

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#### Abstract

The purpose of this paper is to describe college students' (n = 856) gender, year in school and source of tuition funding in relation to their academic motivation. The design was cross-sectional and used cluster sampling. The Academic Motivation Scale was used to measure students' intrinsic and extrinsic motivations as well as amotivation. Three main findings of this study are as follows. First, females reported higher levels of overall motivation as well as intrinsic and extrinsic motivation. Second, both intrinsic and extrinsic motivation declined with years in college. Third, self-funded students appeared lower in academic motivation in general and in extrinsic motivation in particular.

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#### Introduction

Motivation can be defined as that urge or push to carry out a specific action or behavior. A person should not be simply characterized as motivated or unmotivated on a single dimension. Rather, there are varying orientations of motivation (such as intrinsic motivation, extrinsic motivation, and amotivation), and each of these orientations can be experienced to a different level or degree (Ryan & Deci, 2000). At one end of the "motivation spectrum" is intrinsic motivation, which reflects the highest degree of self-determination. Actions and behaviors that are intrinsically motivated are carried out for the purpose of self satisfaction. These actions and behaviors are carried out voluntarily for personal satisfaction and may or may not produce material rewards (Deci, Vallerand, Pelletier, & Ryan, 1991; Vallerand & Bissonnette, 1992; Vallerand, Pelletier, Blais, Brière, Sénécal, & Vallières, 1992). In contrast, actions and behaviors that are extrinsically motivated are carried out as a means to an end rather than an end in itself.

Different types of extrinsic motivation have been described. *Identified regulation* is when an individual chooses to perform a behavior or action because they come to value that behavior as important for one reason or another. At the time of executing the behavior there is no external pressure, since the behavior has become aligned with one's values (Fortier et al., 1995). *Introjected regulation* is where a student behavior is not entirely self-determined, but rather a reflection of an attempt to avoid internal conflict. *External*

*regulation* is what most people are referring to when they mention extrinsic motivation (Vallerand et al., 1992). In this situation behavior is regulated by external rewards and constraints.

Following through these levels of extrinsic motivation, behaviors are becoming more self-determined, with *external regulation* closer to amotivation (defined as the absence of intrinsic or extrinsic motivation). The individual becomes more developmentally advanced as they move through these levels of motivation (Deci et al., 1991; Ryan & Deci, 2000). On the opposite end of the continuum from intrinsic motivation is amotivation, with no self-determination. When an individual is amotivated, they are simply “nonmotivated,” there are no rewards, materialistic or otherwise, for carrying out a behavior, and that action will soon cease (Deci & Ryan, 1985; Deci et al., 1991; Vallerand & Bissonnette, 1992). Deci and Ryan (1985) define this as the time when an individual sees no connection between their behaviors and outcomes; they believe their behaviors are “impersonal” or out of their control.

Fortier and colleagues (1995) also point out that less self-determined forms of motivation or amotivation (the absence of intrinsic or extrinsic motivation) have negative impacts on education. Fortier et al. (1995) have proposed a “motivational model of school performance,” based largely on research by Deci and Ryan (1985). The model states that perceived academic competence and perceived academic self-determination influence levels of autonomous academic motivation, and these levels, in turn, influence school performance. Many studies on academic motivation have relied on the tenets of the Self-Determination Theory (SDT), which is discussed briefly below.

The SDT, as a broad concept used in education, is based on “promoting in students an interest in learning, a valuing of education, and a confidence in their own capacities and attributes (Deci et al., 1991, p. 325).” SDT makes a key distinction between self-determined and controlled types of intentional behavioral regulation: “Motivated actions are self-determined to the extent that they are engaged in wholly volitionally and endorsed by one’s sense of self, whereas actions are controlled if they are compelled by some interpersonal or intrapsychic force (Deci et al., 1991, p. 326).” In other words, a self-determined behavior is solely carried out on an individual’s free will and choice, while a behavior controlled by an external source is done so in response to an external influence.

On the basis of classical organismic theories (cf. Piaget, 1952, 1971; Werner, 1948/1953; White, 1959, 1960), SDT focuses on three basic psychological needs, namely, competence, relatedness, and autonomy, of which all impact an individual’s degree of self-determined motivation (Deci et al., 1991; Faye & Sharpe, 2008). Briefly speaking, competence refers to understanding about how to reach different outcomes, both internal and external; relatedness refers to an individual creating stable and meaningful connections with peers; and autonomy refers to an individual initiating and regulating

their own behaviors (Deci et al., 1991).

Past research has shown that females tend to have higher levels of motivation than males and levels of motivation tend to decline as students progress from freshman to senior year (Ryan & Deci, 2000). No published studies of undergraduate students' levels of motivation were found that assessed differences in academic motivation based on the source of funding for college. The purpose of this study was to assess if relations between academic motivation and gender and class would be replicated in a sample of students at a university in Western New York, and to assess if there were differences in students' motivation based on who was paying for the college experience.

### Methods

This was a cross-sectional study which represents participants' input on a particular instrument at one point in time. Cluster sampling was used to select the sample. The sampling frame included all classes offered in a semester during fall 2008. All face-to-face courses listed in the fall 2008 University catalogue were numbered consequently. Distance learning courses, seminars, and off campus learning experiences were excluded. A total of 30 courses were randomly selected using a research randomizer ([www.randomizer.org/](http://www.randomizer.org/)) from the 167 courses that qualified. Once the thirty courses were identified, the corresponding instructors were contacted and the study was described, and they were asked if they would be willing to distribute the Academic Motivation Scale (AMS) (Vallerand, et al., 1992) along with a measure of students' gender, class, and source of tuition funding. If they were willing, surveys, with instructions, were delivered to the professor. Enrollments were checked to be sure that there were ample surveys. Approval for this study was granted by the College's Human Subjects Committee.

The AMS was the instrument used in this study with written consent from its creators. The AMS was originally created in French and referred to as l'Échelle de Motivation en Éducation (Vallerand, Blais, Brière, & Pelletier, 1989). It was later translated into English and proved to be satisfactory in conversion when tested for psychometric properties (Vallerand, et al., 1992; Vallerand et al., 1993). The internal consistency estimates ranged from .83 to .86, which were quite similar to the French version estimates ranging from .76 to .86 (Vallerand, et al., 1992). The test-retest correlation (of one month) was .79 indicating temporal stability (Vallerand, et al., 1992). The scale consists of 28 items to measure the following seven constructs: intrinsic motivation (1) towards knowledge (2) towards accomplishments (3) to experience stimulation and extrinsic motivation that is (4) identified (5) introjected (6) externally regulated, and (7) amotivation (Vallerand et al., 1992). These are outlined in Table 1 along with a brief description of their meaning or purpose for education (Deci & Ryan, 1991; Deci, Vallerand, Pelletier, & Ryan, 1991; Vallerand, Pelletier, Blais, Brière, & Pelletier, 1989; Vallerand,

Pelletier, Blais, Brière, Sénécal, & Vallières, 1992). In addition to the 28 items on the scale, the following information was added to further assess what, if any, association age, gender, year in school, academic major, and source of funding for school had with academic motivation.

The seven scales identified by the authors of the AMS were created by summing the individual items that composed the scales. Those scales included (1) *Intrinsic motivation - to know* (2) *Intrinsic motivation - toward accomplishment* (3) *Intrinsic motivation - to experience stimulation* (4) *Extrinsic motivation – identified* (5) *Extrinsic motivation – introjected* (6) *Extrinsic motivation - external regulation* and (7) *Amotivation*. Additionally, an overall intrinsic scale was created by summing the items comprising the three intrinsic scales, and an overall extrinsic scale was created by summing the items comprising the three extrinsic scales. These two scales were created to provide a more global estimate of intrinsic and extrinsic motivation. Respondents were asked to report all sources of funding for their current education. Two variables were created to categorize their responses. For the first variable, students who reported that they were funding their education on their own or with the help of loans were coded as *self-funded*. Those who reported that they received funding from their parents or from outside sources (i.e., GI bill or employer) were coded as *not self-funded*. Those who reported a mix of self funding and outside funding were coded as *self/other funded*.

A second variable was also created that categorized *self-funded* as those who reported that they were funding their education without outside help or student loans. This was done because self funded students who receive student loans, an external funding source, may be different than students who fund their education without any external funding sources. Both variables were used to investigate motivational differences.

Data were analyzed with SPSS version 16.0. Descriptive statistics, including frequencies, percentages, means and standard deviations were calculated. Differences between groups were assessed using analysis of variance, Tukey post-hoc tests, and t-tests.

## Results

A total of 29 instructors agreed to distribute the survey and 26 returned the completed set of surveys. Class size varied greatly, (from 5 to 80), since the courses were randomly selected across all disciplines. A total of 856 surveys were completed and returned of the 1052 distributed to registered students (81 % response rate). Demographic information for the participants is as follows. There were almost equal percentages of female (52%) and male respondents. The year in school was distributed relatively evenly, with the exception that freshman were over-represented: freshman (32.2%), sophomore (20.9%), junior (23.7%), and senior (21.5%). The sample comprised students from a wide variety of majors in education, liberal arts,

sciences, and business. The average age of the respondents was 20.

Descriptive statistics of motivation by gender, cohort in college, and funding source are presented in Table 2. The results of the statistical analysis via t-test, on males' and females' academic motivation indicate significant gender differences on all scales except for the *extrinsic external regulation scale*. Specifically, females scored higher than males on all measures of intrinsic motivation. For the overall measure of intrinsic motivation ( $t(799) = -3.77, p < .001$ ), females had an average score ( $M=54.69, SD= 13.73$ ) that was approximately 4 points higher than males ( $M=50.91, SD=14.54$ ). On average, females scored 0.27 standard deviations higher than males on the composite measure of intrinsic motivation. Within the intrinsic motivation measure, females scored consistently higher than males on all three subtypes. The overall measure of extrinsic motivation was also significant ( $t(799) = -4.20, p < .001$ ); females had an average score ( $M=68.53, SD= 11.13$ ) that was approximately 4 points higher than males ( $M=64.99, SD=12.70$ ). This also represents a small to moderate effect size of  $d = .30$ . Only two of the three subtypes of extrinsic motivation showed a significant gender difference. In contrast, the mean of amotivation was significantly ( $t(670.96) = 2.91, p = .004$ ) greater for males ( $M=7.60, SD= 5.22$ ) than for females ( $M=6.60, SD= 4.29$ ). The effect size for amotivation was  $d = 0.21$ , which represents a small effect.

The differences between motivation scale means by cohort revealed that there were significant differences for the intrinsic ( $F(839) = 3.64, p = .012$ ) and extrinsic ( $F(839) = 4.89, p = .002$ ) scales while the amotivational scale was not statistically significant ( $F(839) = 2.60, p = .051$ ). Tukey post-hoc tests were performed on the overall intrinsic and extrinsic scales and indicated that significant differences appeared only between freshman and seniors ( $p = .006$  and  $p = .002$ , respectively), with freshmen having higher levels of motivation than seniors on both intrinsic and extrinsic motivation scales. The overall mean for intrinsic motivation was ~ 55 for freshman versus ~ 50 for seniors. The overall mean for extrinsic motivation was ~ 69 for freshman and was ~ 65 for seniors. Table 2 displays all of the significant differences found between freshmen and seniors via post-hoc testing. All significant post-hoc results by year in college resulted from significant overall ANOVA tests.

Concerning funding for tuition, the most frequently cited funding sources were parents (44%) and financial aid that the student needs to pay back (50%). Funding sources were assessed by the following three categories: (1) Non-self funded, which included the responses, parents are paying for your education, financial aid that parents will pay back, job reimbursement, and GI Bill (tuition benefit provided by the federal government associated with honorable discharge from military service); (2) Self funded, which included the responses, you are paying for your education, and financial aid, which you will pay back; (3) Self and Other, including a mix of funding from the student

and someone else (typically a grandparent). A one-way ANOVA did not show any significant differences for these three categories. However, when comparing students who only reported paying for themselves (not including financial aid) versus all others, there were significant differences on the extrinsic-identification, extrinsic external regulation and the overall extrinsic motivation as well as amotivation scales. Those paying for themselves scored significantly lower on the extrinsic scales ( $M = 64.8$ ,  $SD = 12.2$ ) than those paid by others ( $M = 67.6$ ,  $SD = 11.7$ ) and higher on the amotivation scale ( $M = 7.74$ ,  $SD = 5.02$  versus  $M = 6.8$ ,  $SD = 4.56$ , respectively).

## Discussion

Drawing on the present as well as previous studies, it appears that instructors at all levels have a difficult task in optimizing a learning experience and harnessing intrinsic motivation and the inherent interests of learners. Given the importance of developing autonomy, which has been demonstrated from elementary schools (Deci, Schwartz, Sheinman, & Ryan, 1981) to medical schools (Williams & Deci, 1998), it is important that higher education policy makers, researchers and practitioners take steps in this direction even further. Evaluative research is needed to develop, implement and evaluate alternative approaches for bolstering the academic motivation of all students, and males and those in their junior and senior years in particular.

Limitations of this study constrain the inferences that may be drawn. The cross-sectional design, single method of data collection, highly restrictive setting and sampling frame, and delimited scope of measurements must be considered when interpreting the results. First, the cross-sectional design limits drawing any causal inferences. Second, measuring motivation with a single instrument results in mono-operation bias and results may be different if motivation is measured in other ways. While the sampling strategy and response rate provides a representative sample of the student population in the study setting, there may be selection bias when comparing these results to other samples. However, the results were quite similar with Vallerand and Bissonnette (1992) and Vallerand, Pelletier, Blais, Brière, Sénécal, & Vallières (1992) concerning gender differences. It should also be noted that the differences observed were not large, and some of the statistically significant findings are due to the large sample size. Nevertheless, the results are consistent with those reported by others and have implications for future research and practice.

Higher observed levels of motivation among females is consistent with previously reported findings. Males may require tailored efforts to reduce their disparity in academic motivation. Research to improve understanding about factors influencing academic motivation among female and male students is needed to inform policy and practice in efforts to promote optimal growth and development during the college experience.

Both intrinsic and extrinsic motivation declined with years in college, and this finding seems to support the statement made by Ryan and Deci in 2000, that, in general, levels of intrinsic motivation decrease with a progression through one's academic career, becoming less and less self-determined. Given students' waning motivation, the next step is to identify the etiological factors that may account for the declining motivation. For that purpose, a prospective study is needed. We speculate that the decrease of college students' intrinsic motivation may be because they are not experiencing enough autonomous (self-determined) learning. If this is the case, then there may be a need to arouse instructors' awareness to this phenomenon and to encourage adaptations in courses in which students may feel "lost" and lose both interest and confidence—both key components of the Self-Determination (Deci & Ryan, 1985).

Our findings related to funding source for tuition were not expected. Self-funded students appear to be lower in academic motivation in general and in extrinsic motivation in particular. The relatively weak motivation of self-funded students may be because they would not have the external motivators such as loans to pay, or tuition-paying parents to please. Students paying their own way may be burdened with work and other responsibilities that take precedence. Additional research is needed to replicate this finding and, once replicated, gain greater understanding of the dynamics of this relation.

The *sine qua non* of the Self-Determination Theory, postulates that there are different types of motivation, mainly controlled and autonomous, that can be distinguished as intrinsic and extrinsic motivation. Self-Determination Theory has been applied to many arenas, but in terms of education its function revolves around enhancing interest and confidence in education as a social context (Deci & Ryan, 1985, 1991, 2000; Ryan & Deci, 2000; Deci, Vallerand, Pelletier, & Ryan, 1991). Researchers have found that students who are self-determined are more likely to stay in school (Pintrich & DeGroot, 1990). Ryan and Powelson (1991) suggest that students in learning contexts that promote autonomy, competence, and relatedness are more likely to convey their natural inclination to learn, to do, and to grow.

While the type of environment that is conducive to an autonomous learning situation may lead to more work for an instructor, the rewards may be worthwhile. For example, personalized feedback is a time-consuming task for an instructor, but has been associated with student satisfaction and performance in empirical studies (e.g., Gallien & Oomen-Early, 2008). Moreover, the immediacy of instructor behaviors (i.e., verbal encouragement, and praising, asking questions, using humor, self-disclosure, and providing individualized feedback) had a strong positive effect on student satisfaction (Gallien and Oomen-Early, 2008).

#### Table 1: Depiction of the Academic Motivation Scale

**Table 2. Mean Values of Motivation by Gender, Class in School, and Funding Source**

**References**

- Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology*, 73, 642–650.
- Deci, E.L. & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E.L. & Ryan, R.M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation: Vol. 38. Perspectives on motivation* (p. 237-288) Lincoln, NE: University of Nebraska Press.
- Deci, E.L., Vallerand, R.J., Pelletier, L.G., & Ryan, R.M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, 26(3&4), 325-346.
- Faye, C. & Sharpe, D. (2008). Academic motivation in University: The role of basic psychological needs and identity formation. *Canadian Journal of Behaviour science*, 40, 4, 189-199.
- Fortier, M.S., Vallerand, R.J., & Guay, F. (1995) Academic motivation and school performance: Toward a structural model. *Contemporary Educational Psychology*, 20, 257-274.
- Gallien, T., & Oomen-Early, J. (2008). Personalized versus collective instructor feedback in the online courseroom: Does type of feedback affect student satisfaction, academic performance and perceived connectedness with the instructor? *International Journal on Distance learning*, 7(3), 463-476.
- Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press.
- Piaget, J. (1971). *Biology and knowledge*. Chicago: University of Chicago Press.
- Pintrich, P.R. & De Groot E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-50.
- Ryan, R.M., & Powelson, C.L. (1991). Autonomy and relatedness as fundamental to motivation in education. *Journal of Experimental Education*, 60, 49-66.
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the



facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.

Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67.

Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of Personality*, 60, 599–620.

Vallerand, R. J., Pelletier, L. G., Blais, M. R., & Brière, N. M., Senecal, C. & Vallières, E. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, 1003-1017.

Vallerand, R.J., Blais, M.R., Brière, N.M., & Pelletier, L.G. (1989). Construction et validation de l'Échelle de Motivation en Éducation (EME). *Revue canadienne des sciences du comportement*, 21, 323-349.

Vallerand, R.J., Pelletier, L.C., Blais, M.R., Brière, N.M., Senecal, C., & Vallières, E.F. (1992). The academic motivationscale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, 1003-1017.

Vallerand, R.J., Pelletier, L.C., Blais, M.R., Brière, N.M., Senecal, C, & Vallières, E.F. (1993). On the assessment of intrinsic, extrinsic, and amotivation in education: Evidence on the concurrent and construct validity of the academic motivation scale. *Educational and Psychological Measurement*, 53, 159-172.

Werner, H. (1948/1953). *Comparative psychology and mental development*. New York: International University Press.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*: 66, 297-333.

White, R. W. (1960). Competence and the psychosexual stages of development. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (Vol, 8, 97-141). Lincoln, NE: University of Nebraska Press.

Williams, G. C., & Deci, E. L. (1998). The importance of supporting autonomy in medical education. *Annals of Internal Medicine*, 129,303–308.

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