

Self-Determination: Motivation Profiles of Bachelor's Degree-Seeking Students at an Online, For-Profit University

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Abstract

Grounded in self-determination theory, this exploratory quantitative study investigated motivational profiles of bachelor's degree-seeking students at an online, for-profit university. Cluster analysis revealed two distinct motivational profiles (internally and externally regulated) of 158 students enrolled in a bachelor's degree program. The significant differences between the two profiles offers support for the multidimensional nature of motivation as argued by self-determination theory. A chi-square test of independence revealed a significant association between motivational profile membership and gender. No associations were found between motivational profile membership and age. The results offer insights into the motivations of bachelor's degree-seeking students attending an online, for-profit university. Over two thirds of the students in this study exhibited high external forms of motivation. It is recommended that practitioners employ methods to increase autonomous forms of motivation in the online, for-profit educational setting. Understanding student motivations to graduate may help administrators, curriculum designers, and instructors develop focused interventions and best practices that could be used to increase graduation rates.

Keywords: self-determination theory, motivational profiles, academic motivation scale, online education

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More Americans are pursuing an advanced education than ever before, and by 2026 enrollment rates are expected to increase another 9% at four-year schools (Institute of Education Sciences, 2017). The leading increase in enrollment rates occurred at private, for-profit institutions from 2000 to 2015. Enrollment rates at for-profit institutions were 139% higher than nonprofit institutions and 141% higher than public institutions (Institute of Education Sciences, 2017). While for-profit universities and colleges have been instrumental in increasing enrollment rates, there

exists a disparity between the graduation rates at for-profit institutions and other institution types. By 2015, first-time, full-time bachelor's degree-seeking students had graduated within six years at a rate of 66% from nonprofit institutions, 59% from public institutions, and only 23% from for-profit institutions (Institute of Education Sciences, 2017).

Admission policies and acceptance rates help explain the imbalance in graduation rates among schools. Sixty-three percent of for-profit universities have no application criteria (Institute of Education Sciences, 2017). Therefore, for-profit institutions have the highest application acceptance rates to bachelor's degree programs (Institute of Education Sciences, 2017). Unrestrictive entrance policies allow students to gain acceptance without having to take an exam or provide evidence of past high scores or extracurricular activities to demonstrate readiness to attend college. However, many students accepted to for-profit institutions are underprepared for university work, have lower performance rates, and are more likely to drop out (Melzer & Grant, 2016). These characteristics present challenges to institutions actively seeking measures to graduate more students and sustain a place in the education market.

For-profit institutions whose students' primary source of payment is federal financial aid (Bok, 2013; Deming, Goldin, & Katz, 2013) are hesitant to implement remedial courses. If students were required to take non-credit-bearing remedial courses to become better prepared, they would have to pay out of pocket, incur an increased time to graduation (Melzer & Grant, 2016), and be less likely to graduate (Schak, Metzger, Bass, McCann, & English, 2017). Thirty percent of university students forced to attend remedial courses do not show up for program classes due to frustration, and over 35% do not graduate from a four-year program within six years (Complete College America, 2012). Additionally, college success courses designed to increase student preparedness may not have any effect on student persistence (Claybrooks & Taylor, 2016) or performance (Ulmer, Means, Cawthon, & Kristensen, 2016). Hence, a different approach is needed in for-profit institutions to identify the factors that contribute to student persistence to graduation.

Researchers have begun calling attention to the role of noncognitive, psychosocial factors that contribute to undergraduate student success (Aparicio, Bacao, & Oliveira, 2017; Lange, 2015; Thomas & Borrayo, 2016; Walker, 2016). Noncognitive factors are hopeful measures because they account for mental assets that can enhance cognitive development and improve performance (Economic Policy Institute, 2014). Many of these factors are malleable, meaning strategically developed interventions at the individual, course room, and programmatic level could influence more students to persist (Khine, 2016). Motivation variables represent noncognitive factors that students carry with them in the form of attitudes, regulation skills, and behaviors (Ryan & Deci, 2017). The dearth of research on for-profit university students' noncognitive characteristics and even less literature on for-profit students' motivations are problematic for faculty, administrators, and policymakers who want to develop supports for students who attend for-profit institutions (Carroll, 2016). Gaining insight into for-profit student motivational profiles and characteristics through a systematic investigation may have implications for higher education and practice.

The purpose of this exploratory quantitative study was to identify bachelor's degree-seeking student motivational profiles and examine differences between motivational profile membership and student characteristics (i.e., gender, age). A cross-sectional survey design was employed to collect data from bachelor's degree-seeking students at an online, for-profit university. The independent variables used to identify motivational profiles included seven constructs based on self-determination theory (SDT): intrinsic motivation - to know, intrinsic motivation - toward accomplishment, intrinsic motivation - to experience stimulation, extrinsic motivation - identified, extrinsic motivation - introjected, external regulation, and amotivation.

The instrument used to measure academic motivation was the Academic Motivation Scale (AMS) (Vallerand et al., 1992). Although the AMS has been used to investigate a variety of student populations, it has limited use in assessing students attending online, for-profit universities (Carroll, 2016).

Review of Related Literature

Researchers have developed numerous theories to explain human motivation and behavior. The theoretical framework for this study is based on the SDT. SDT is one of the most widely applied and empirically based psychological theories for understanding factors that promote human motivation (Hodge, 2017). Its originators, Deci and Ryan (1985), contended that people have an inherent desire to be competent and to master the environment. However, the basic drive to be skilled is sensitive to the social environment (Ryan & Deci, 2017). In this way, SDT's predictions about human motivation depend on the dynamic interaction between the person's active self and the social context (e.g., online courses).

The degrees of motivation under the tenets of SDT can range from amotivation to extrinsic motivation to intrinsic motivation. Amotivation results in non-self-determined behavior. Students who are amotivated may find no value in attending school. Extrinsic motivation is defined as action for external reasons or internal pressure (Ryan & Deci, 2017). For example, students might attend school because they want higher pay or because education is valued by their family (Ardenska et al., 2016). Coercion and pressure-driven actions are what classify this form of motivation as controlled. Mih and Mih (2016) associated controlled motivation with fear of failure and cheating in the academic environment. Intrinsic motivation is characterized by behavior performed by will or volition (Ryan & Deci, 2017). For example, students attend school because it allows them to continue to learn about new and interesting subjects (Ardenska et al., 2016). Inherent interest and curiosity actions are what classify this form of motivation as autonomous. Researchers have submitted autonomous motivation played the biggest role in predicting student achievement (Jeno, Grytnes, & Vandvik, 2016; Taylor et al., 2014).

SDT has served as the framework for research in the domains of education, business, healthcare, psychology, and sports (Ryan & Deci, 2017). The continuum has been used in studies to investigate participants' intentions to continue sport (Keshtidar & Behzadnia, 2017), to use mobile technology (Nikou & Economides, 2017), and to continue volunteering (Li, Wu, & Kee, 2016). Autonomous forms of motivation positively predicted intention in each of these studies. Li et al. (2016) also found controlled motivation negatively related to intention. Additionally, Nikou and Economides (2017) and Li et al. (2016) found a positive environment positively predicted autonomous motivation.

The person-centered approach examines the individual's complete motivational profile under the framework of SDT. In other words, profiles do not represent opposite ends of the SDT continuum. Instead, the person-centered approach can be used to identify complex motivational behavior regulation patterns (Howard, Gagne, Morin, & Forest, 2016; Howard, Gagne, Morin, & Van den Broeck, 2016). For example, Moreno-Murcia, Gimeno, Hernandez, Belan-do Pedreno, and Marin (2013) found two motivational profiles based on combinations of autonomous and controlled motivations among physical education students from secondary education schools. The person-centered method assumes the multidimensional nature of motivation (Chemolli & Gagne, 2014).

Cluster analysis is a popular multivariate technique used in person-centered analysis. The purpose of cluster analysis is to create groups based on common characteristics in the data. The exploratory nature of this method means the exact number of motivational profiles are not known ahead of time (Pyburn, 2015). In other words, the approach is taken not to confirm a hypothesized number of motivational profiles, but to identify the number and type of motivational profiles within the sample. For example, four motivational profiles were identified using cluster analysis in a study of intra-individual differences in self-regulated learning behavior among college students (Liu et al., 2014). Qualitatively, the researchers labeled two of these profiles as adaptive and two as maladaptive. Adaptive profiles had higher motivation, higher autonomous regulation, and higher grades. Maladaptive profiles had lower motivation and lower grades. These results highlight the unique advantage of profiles in identifying specific combinations of regulation.

Methods

The purpose of this study was to identify bachelor's degree-seeking student motivational profiles and examine differences between motivational profile membership and student characteristics (i.e., gender, age) at an online, for-profit university. The following research questions guided this study:

- Q1.** What are the motivational profiles of bachelor's degree-seeking students attending an online, for-profit university?
- Q2.** What association, if any, exists between bachelor's degree student motivational profiles and gender at an online, for-profit university?
- Q3.** What association, if any, exists between bachelor's degree student motivational profiles and age at an online, for-profit university?

Sample

The population for this study was bachelor's degree-seeking students enrolled in a 100% online, for-profit university accredited by the Distance Education Accrediting Commission. The most recent data submitted to the National Center for Education Statistics (2015) was as follows: 87% of the student body was 26 years old or older, and approximately 31% of students who pursued a bachelor's degree in the 2009 cohort graduated within six years. While this percentage was larger than the national average of 23%, it must be noted that the entire population was accounted for, not just full-time, first-time students. In the interest of developing motivational profiles for the for-profit demographic, the entire student population was used in this study. The university had an open admission policy, with students enrolled in allied health, arts and sciences, business, and engineering and computer science bachelor's degree programs.

A list identifying students enrolled in a bachelor's degree program was created by a university representative ($N = 2,604$). Although cluster analysis has become popular in recent years, there is no formal approach for determining preferred sample size. Cluster analysis is not an inferential test and does not include significance testing; therefore, power analysis does not apply. However, Formann (1984) recommended a sample size of at least 2^k , preferably $5(2^k)$, where k equals the number of clustering variables. This recommendation resulted in a minimum sample size of 128 and a preferred sample size of 640 for this study based on the seven variables from SDT. To get the highest response rate, the total population was invited to participate in an email survey. Since the study also included inferential statistical analysis, a power sample calculation found that 335 students were needed to compose the sample, with a confidence level of 95% and

a confidence interval of 5%. However, the number of completed surveys resulted in a smaller sample size. Adjusting for the sample size of 158 resulted in a confidence level of 80% with a 5% margin of error.

Measures

The instrument for this study was an anonymous survey which included three demographic questions and the AMS (Vallerand et al., 1992). The demographic information began with one screening question to ask participants if they were currently enrolled in a bachelor's degree program at the university. Other demographic questions included age and gender (i.e., male or female). The AMS is a validated instrument used to measure seven subscales of academic motivation based on the SDT continuum. The AMS consists of an amotivation subscale, three extrinsic motivation subscales, and three intrinsic motivation subscales. The scale includes 28 items, four per subscale. Participants rated how statements applied to them on a 7-point Likert-type scale (see Appendix A). A higher score indicates a higher level of academic motivation, except for the amotivation subscale, in which a higher score indicates a lower level of motivation. Confirmatory factor analysis has been used in previous psychometric studies to test construct validity. Fit indices and residual analysis support the seven-subscale AMS model in previous studies (Can, 2015; Guay, Morin, Litalien, Valois, & Vallerand, 2015; Haslofca & Korkmaz, 2016; Orsini et al., 2015; Stover, Iglesia, Boubeta, & Liporace, 2012). Cronbach's alpha reliability (Cronbach, 1951) is a widely used measure of internal consistency reliability when the measurements represent multiple questionnaire items (Bonnet & Wright, 2015). Cronbach alphas above .60 represent acceptable internal consistency, and alphas below .50 are considered unacceptable (Manerikar & Manerikar, 2015). Internal consistency reliability analyses in previous studies indicated AMS subscales displayed adequate internal consistency reliabilities. For example, Haslofca and Korkmaz (2016) found subscale reliability coefficients were between .77 and 0.86; Orsini et al. (2015) found internal consistency scores were between .65 and .83; and Stover et al. (2012) found values between .61 and .81.

Procedure

The anonymous survey was constructed in Qualtrics (a commercially available online survey platform). This survey study posed no more risk than an individual would encounter in everyday life. Once the study site approved, a list of students enrolled in bachelor's degree programs at the study site was created by a university site representative ($N = 2,604$). The representative sent the survey invitation to the students on the list via the university email system. The email invitation provided students with all the information about the research project. Students gave informed consent and agreed to participate in the study by clicking on a link provided at the end of the invitation. Participants were allowed to withdraw from the study at any time. Responses were collected for seven days to ensure participants could respond at their convenience. The university representative sent a reminder email on the eighth day. Participants were given another seven days to respond at their convenience. The university site did not record or store email invitations. The survey was closed to responses on the 14th day.

In testing the first research question, a cluster analysis in SPSS (25.0) was used to identify student motivational profiles for bachelor's degree-seeking students. Cluster analysis involves classifying individuals into groups based on the probability of membership in each group (Bray, Lanza, & Tan, 2015). The factors from the AMS were used in the cluster analysis. The number of clusters was not known before the analysis was conducted. In this way, cluster analysis differs from other multivariate techniques (Pyburn, 2015). An exploratory approach was taken to identify the number of motivational profiles that existed for bachelor's degree-seeking students at the for-

profit university. Models with an increasing number of clusters were tested and compared to identify the model that best fit the data. This method has been used previously to identify profiles under the tenets of SDT (Howard, Gagne, Morin, & Van den Broeck, 2016; Lindwall et al., 2017; Rothes, Lemos, & Goncalves, 2017). Motivational profiles were then qualitatively classified based on results. Chi-square tests of independence were conducted between motivational profile membership and gender, as well as age to investigate the remaining two research questions.

Results

Two hundred and twenty-nine responses were collected from participants for a response rate of 8.79%. Twenty-seven participants were removed from the data who did not complete the survey, as the analysis was dependent on completed survey responses. In addition, the first survey question identified 44 participants who did not answer that they were currently attending a bachelor's degree program. These participants were removed because the study was based on students who are currently seeking a bachelor's degree. The remaining 158 participants resulted in a 6.07% response rate of useable surveys.

There were 17 participants who had at least one missing value for a total of 21 missing values in the survey data. Item nonresponse can have a disrupting effect on the analysis (Saris & Gallhofer, 2014). Using a listwise deletion method of data analysis would have resulted in using only 140 complete cases, reducing the sample size another 10.76%. Little's MCAR test using expectation maximization indicated data were missing completely at random, $X^2(748) = 729.78$, $p = .676$ (Little, 1988). Since the missing values did not depend on unobserved variables and may be well predicted from other observed variables, expectation maximization was used on each subscale with missing data to estimate missing values so that all available data could be analyzed (Garson, 2015).

Although previous studies have provided support for the construct validity of the AMS (Haslofca & Korkmaz, 2016; Orsini et al., 2015; Stover et al., 2012), to contribute to the growing body of research lending evidence to the construct validity, Cronbach's alpha (α), using SPSS (25.0), was used to test internal reliability of the subscales on the survey. Seven subscales (four items each) from the AMS measured student motivation forms. The constructs IMTK and IMTA had excellent levels of internal consistency ($\alpha = .912$ and $\alpha = .903$, respectively). The constructs of IMES, EMID, EMIN, EMER, and AMOT had good levels of internal consistency ($\alpha = .878$, $\alpha = .850$, $\alpha = .838$, $\alpha = .870$, and $\alpha = .854$, respectively).

Demographic questions were somewhat normally distributed as assessed by visual inspection of histograms. Participants 25 years of age or older characterized 96.8% of the sample. Males represented 64.6% of the participants, and females represented 35.4% of the participants. The AMS questions were not normally distributed as assessed by visual inspection of histograms, as well as skewness and kurtosis scores. Descriptive statistics and the use of ordinal data for this study supported the use of nonparametric methods, which are free from statistical distribution assumptions (Emerson, 2017; Kero & Lee, 2016; Patle, Libang, & Ahuja, 2016). Median scores were calculated for each of the AMS subscales. Median scores for variables ranged from 1.00 for amotivation to 5.50 for extrinsic motivation - introjected and extrinsic motivation - external regulation (see Table 1).

Table 1.
Academic Motivation Scale: Medians and Percentiles

	<i>N</i>		Median	Percentiles		
	Valid	Missing		25	50	75
IMTK	158	0	5.00	4.00	5.00	6.00
IMTA	158	0	4.50	3.00	4.50	6.00
IMTE	158	0	3.25	2.00	3.25	4.50
EMIN	158	0	4.75	3.50	4.75	6.00
EMID	158	0	5.50	4.00	5.50	6.50
EMER	158	0	5.50	4.50	5.50	7.00
AMOT	158	0	1.00	1.00	1.00	1.50

Cluster Analysis

Cluster analysis was conducted in SPSS (25.0) to identify student motivation profiles from the seven constructs of the AMS. Both hierarchical and two-step cluster analyses were conducted to provide the most stable solution. A hierarchical approach using Ward's linkage method and squared Euclidean distance as the similarity measure was first taken to explore the potential number of clusters represented in the data (Moreno-Murcia et al., 2013). Agglomeration coefficients from the hierarchical analysis were examined, and the percentage change in coefficients indicated sizable change in heterogeneity from one to two clusters. However, little change in heterogeneity occurred from two to three clusters and beyond.

A two-step cluster analysis was then performed using the median scores for the constructs. The two-step cluster analysis was used with a distance measure of log-likelihood, a clustering criterion of Akaike's information criterion and SPSS set to automatically determine the number of clusters. Two clusters were identified with a fair cluster. Inspection of the predictor importance for the two-cluster solution revealed no swamping variables. An additional two-step cluster analysis was run to check for model stability and reliability. The additional check was made by forcing SPSS to create three clusters with a Euclidean distance measure. Cluster quality degraded with the three-cluster solution. Inspection of the predictor importance for the three-cluster solution revealed amotivation to be a swamping variable; therefore, the two-cluster solution was retained.

Profile labels were created by examining the clusters and identifying explanatory variables to profile the clusters (see Figure 1).

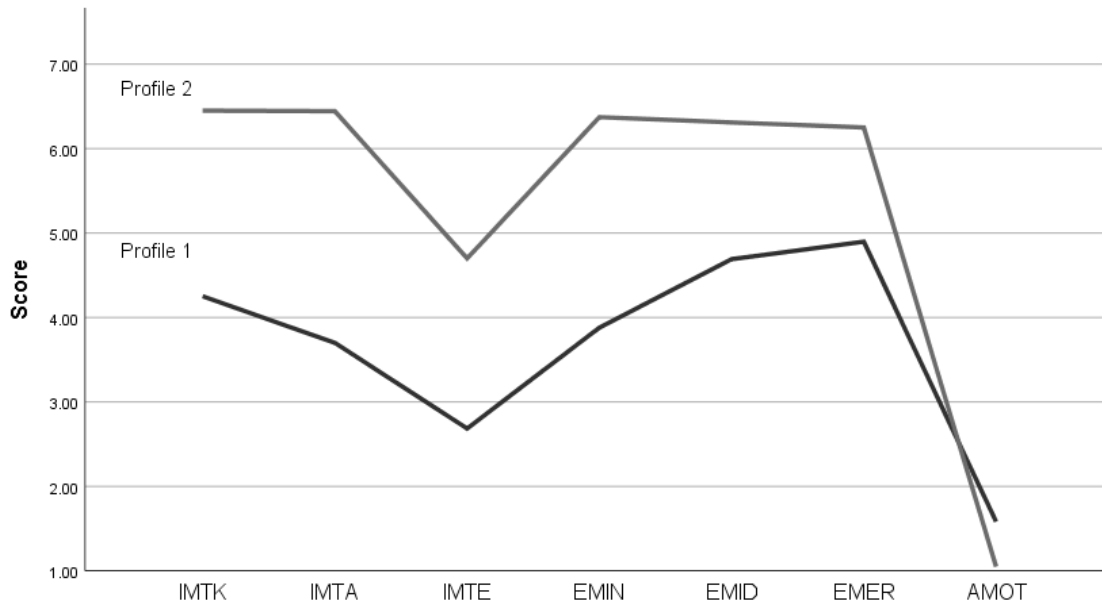


Figure 1. Graphical representation of cluster classification from two-step cluster analysis of AMS median scores in SPSS (25.0).

The first cluster (Profile 1) represented 108 students (68.4%) with lower levels of all motivation forms except amotivation. Relatively, Profile 1 had lower levels of the internal motivation forms of IMTA and EMIN and higher levels of the external motivation forms of EMID and EMER compared to Profile 2. Therefore, Profile 1 was qualitatively labeled as “externally motivated.” The second cluster (Profile 2) represented 50 students (31.6%) with higher levels of all motivation forms compared to Profile 1, except amotivation. However, amotivation was still low for Profile 2. Relatively, Profile 2 had higher levels of the internal forms of motivation of IMTA and EMIN and lower levels of the external motivation forms of EMID and EMER compared to Profile 1. Therefore, Profile 2 was qualitatively labeled “internally motivated.” Profile assignments (i.e., 1 and 2) were ordered by increasing level of self-regulation (i.e., from “external” to “internal” forms of regulation).

A Mann-Whitney U test was run to determine whether the differences between the motivational profiles scores on all seven SDT constructs were significant. Distribution of the scores for Profile 1 and Profile 2 were not similar, as assessed by visual inspection. IMTK scores for Profile 1 (mean rank = 57.92) were statistically significantly lower than for Profile 2 (mean rank = 128.12), $U = 5,031$, $z = 8.784$, $p < .0005$. IMTA scores for Profile 1 (mean rank = 56.25) were statistically significantly lower than for Profile 2 (mean rank = 129.73), $U = 5,212$, $z = 9.444$, $p < .0005$. IMTE scores for Profile 1 (mean rank = 62.89) were statistically significantly lower than for Profile 2 (mean rank = 115.37), $U = 4,494$, $z = 6.747$, $p < .0005$. EMIN scores for Profile 1 (mean rank = 57.57) were statistically significantly lower than for Profile 2 (mean rank = 128.86), $U = 5,068$, $z = 8.904$, $p < .0005$. EMID scores for Profile 1 (mean rank = 63.70) were statistically significantly lower than for Profile 2 (mean rank = 113.62), $U = 4,406$, $z = 6.449$, $p < .0005$. EMER scores for Profile 1 (mean rank = 66.66) were statistically significantly lower than for Profile 2 (mean rank = 107.24), $U = 4,087$, $z = 5.254$, $p < .0005$. AMOT scores for Profile 1 (mean rank = 86.38) were statistically significantly higher than for Profile 2 (mean rank = 64.65), $U = 1,958$, $z = -3.546$, $p < .0005$.

Profile Membership and Gender

A chi-square test of independence was conducted between motivational profile membership and gender. All expected cell frequencies were greater than five. There was a statistically significant association between motivational profile membership and gender, $\chi^2(1) = 5.041, p = .025$. The association was small to medium in strength (Cohen, 1988), Cramer's $V = .179$. More males than expected fell into the lower motivational profile, and more females than expected fell into the highly motivated profile. The four standardized adjusted residuals are reported in Table 2.

Table 2

Crosstabulation of Motivational Profile Membership and Gender

	Motivational Profiles	
	Lower Motivation	Highly Motivated
Gender		
Male	76 (2.2)	26 (-2.2)
Female	32 (-2.2)	24 (2.2)

Note. Adjusted residuals appear in parentheses below observed frequencies.

Profile Membership and Age

A chi-square test of independence was conducted between motivational profile membership and age. Only 70% of the expected cell frequencies were greater than five. Specifically, age categories 18–24 and older than 54 had cell counts less than five. There was not a statistically significant association between motivational profile membership and age, $\chi^2(4) = 2.831, p = .586$. The five age categories were then collapsed into two categories (18–34 and 35 or older). All expected cell frequencies were greater than five. There was still not a statistically significant association between motivational profile membership and age, $\chi^2(1) = 2.777, p = .096$.

Discussion

For-profit universities have increased accessibility to higher education, which has increased overall enrollment in higher education (Institute of Education Sciences, 2017). However, only 23% of bachelor's degree-seeking students at for-profit universities persist to graduate within six years (Institute of Education Sciences, 2017). Researchers have studied student cognitive attributes at for-profit institutions; however, little attention has been given to the noncognitive characteristics that may promote or hinder persistence to graduate (Carroll, 2016). Given the links between motivation and important outcomes in other academic settings (Atalay et al., 2016; Ghiasvand et al., 2017; Kriegbaum et al., 2016) and the low graduation rates at for-profit institutions, the current study investigated bachelor's degree-seeking students' motivations for graduating within six years at a for-profit university.

Results indicated two motivational profiles for the students attending a bachelor's degree program at an online, for-profit university: internally and externally motivated. Participants 25 years of age or older characterized 96.8% of the sample, and most students (68.4%) had an externally motivated profile. Results support a previous study where students reported mainly extrinsic reasons for attending school (Taylor et al., 2014). However, results contradict Quiggins

et al.'s (2016) research, which found nontraditional students to have higher levels of intrinsic motivation than extrinsic motivation.

It is also contrary to Knowle's (1984) assumption of andragogy that argues adult learners are more intrinsically motivated to learn. Previous studies using the tenets of SDT to develop motivational profiles in high school (Paixao & Gamboa, 2017), military (Gillet, Becker, Lafreniere, Huart, & Fouquereau, 2017), work (Howard, Gagne, Morin, & Van den Broeck, 2016), and traditional university (Kusurkar, Croiset, Galindo-Garre, & Cate, 2013) settings with differing results demonstrate that motivational profiles are most likely specific and unique to the context. These findings imply that students at for-profit universities may have different motivations than students in other academic settings (Malone, 2014; Quiggins et al., 2016).

Only 31.6% of the students in this study were internally motivated to achieve a bachelor's degree within six years at the online, for-profit university. This percentage coincides with the graduation rates of 31% at this university (National Center for Education Statistics, 2015). This parallel might help explain the low graduation rates from a bachelor's degree program at the for-profit university. Self-regulation occurs with intrinsic motivation, rather than with extrinsic motivation (Deci & Ryan, 1985; Ryan & Deci, 2000). Approximately two thirds of bachelor's degree-seeking students were found to have high levels of external regulation. External regulation is the most extrinsic form of motivation. Extrinsic motivation can be useful in helping students get started and in achieving short-term goals. However, extrinsic motivation may not be sustainable for long-term goals. If students are externally motivated (e.g., by a better paying job, more money), they may become disinterested in or even resentful of the actions they have to take toward to the goal (Ryan & Deci, 2000). These feelings may lead to delaying education or dropping out altogether, especially since the goal takes years to achieve. Stopping out, dropping to part-time, and withdrawing from classes have been identified as reasons for students failing to complete degrees even after years of attendance (Donhardt, 2013). Intrinsic motivation is needed for long-term goals, such as earning a degree that takes four to six years of work. Intrinsic motivation is the "prototype" of self-motivated behavior (Ryan & Deci, 2017).

Gender played a role in motivation profile membership. Approximately 75% of male students were externally regulated compared to 57% of female students. This result explains a significant association in motivation level and gender. Proportionally, more males were extrinsically motivated in this particular online educational setting. Previous research (Kimmel, Gaylor, & Hayes, 2014) found that adult learners differ by gender in their motivation to attend college. Specifically, males were found to be driven to obtain higher education by career retention and financial gains—externally regulated behavior. There was no association between motivation profile membership and age. This result is not surprising since more than 96% of the sample was over 25 years of age. However, when profiles were collapsed into two categories (i.e., 18–34 and 35 or older), there was still no association. This implies that age played no role in the high levels of student external regulation in this educational setting.

The results of this study add to the growing body of research supporting the multidimensional nature of motivation as proposed by SDT (Boiche & Stephan, 2014; Chemolli & Gagne, 2014; Howard, Gagne, Morin, & Forest, 2016; Howard, Gagne, Morin, & Van den Broeck, 2016). Students experienced a range of motivation types occurring in varying degrees across the SDT continuum of self-regulation. In fact, students had multiple forms of motivation occurring at once regardless of motivational profile. In both motivational profiles identified in the current study, students had high levels of intrinsic motivation to know, extrinsic motivation – identified, and external regulation. These combinations imply students had multiple reasons for

attending school at the for-profit university. For example, students might be pursuing a bachelor's degree because they want to advance their career (external regulation), feel it is important to their family (extrinsic motivation - identified), and enjoy learning (intrinsic motivation - to know). However, unlike previous studies (Howard, Gagne, Morin, & Van den Broeck, 2016; Lindwall et al., 2017), an amotivational profile was not identified. An amotivated profile might have helped explain a lower graduation rate at the online, open admission university. It is possible that students identified as amotivated may not be attending university for the right reasons (Tighe, 2013). The absence of an amotivated profile does not automatically mean that one did not exist. Due to the voluntary and nonincentivized nature of the study, it is logical that students who lack motivation may not have participated in the study.

Limitations

There were limitations in this current study. The low response rate in this study could contribute to potential nonresponse bias. Surveys with lower than 50% response rates may not be representative of the population (Leedy & Ormrod, 2016). In fact, participants were primarily White, male, nontraditional students. Neither hierarchical nor two-step cluster analysis uses weights in SPSS (25.0) procedures, so the sample was not weighted, which could have helped the sample more closely represent the population. However, the careful data collection, appropriate statistical analysis, and replicability of this study support its internal validity. Over 60% of students attending online schools are White, and 25% of those students are male (Clinefelter & Asianian, 2017). While caution should be taken in generalizing these study results to the entire online population (Yimeng, Kopec, Cibere, Li, & Goldsmith, 2016), inferences to this subpopulation would be reasonable.

Recommendations

In contrast to previous reports (Malone, 2014; Quiggins et al., 2016) and adult learning theory (Knowles, 1984), the findings in the current study revealed most students at the online, for-profit university had high levels of external motivation. Recent reports have contended that online students attend school for the external reasons of transitioning to new career, advancing in their career, or increasing wages (Clinefelter & Asianian, 2017). Only 11% of online students attend to get the internal satisfaction of learning and completing a degree (Clinefelter & Asianian, 2017). Similarly, Vanslambrouck, Chang, Tondeur, Phillipson, and Lombaerts (2016) found the main motives for adult learners in a blended learning environment were linked to controlled motivation. While researchers have studied graduation rates (Gresham, Thompson, Luedtke-Hoffmann, & Tietze, 2015; Horn & Lee, 2016) and student persistence (Claybrooks & Taylor, 2016; Lipe & Waller, 2013) at for-profit institutions, there is dearth research on student motivation. It is plausible that students in this setting have different motivations than students in other settings. Therefore, further research on student motivation in the same context of a for-profit undergraduate setting is recommended.

Overall, SDT appears to offer a theoretical framework for understanding the complex nature of student motivation. The results of this study indicated two distinct motivational profiles: externally motivated and internally motivated. Results support the argument that multiple forms of student motivation coexist, not just the dichotomous view of intrinsic versus extrinsic motivation (Howard, Gagne, Morin, & Van den Broeck, 2016; Liu et al., 2014; Wang et al., 2016). Students in this study had complex motivational profiles, with forms of external regulation and extrinsic motivation alongside more self-determined forms of motivation. Based on these results, it is recommended that future research adopt the person-centered approach in investigating student motivation (Chemolli & Gagne, 2014) in the for-profit setting.

Previous research has found that motivation is a dynamic state that may change over time (Orsini, Binnie, Fuentes, Ledezma, & Jerez, 2016). In fact, research has shown that in the online environment, students who start with lower motivation forms further degrade over time (Fryer, Bovee, & Nakao, 2014). Furthermore, Taylor et al. (2014) found that intrinsic motivation was the only motivation form to consistently positively associate with academic achievement over time. In addition to continued research using a person-centered approach, a longitudinal study using the AMS is recommended. Course designers and instructors could also use the AMS survey tool to measure student motivation at the beginning and throughout a student's academic career. Knowing the motivations of students means that instructors and institutions can act to maintain higher motivation levels throughout a program.

Interestingly, the percentage of students with high extrinsic motivation coincided with the study site's nongraduation rates. It is possible that students with external regulations could represent an at-risk student population for which interventions and best practices could be used to increase graduation rates in bachelor's degree programs. Motivation is a key factor in online student persistence (Lucey, 2018). Lack of interaction has been found to contribute to lower motivation in online students (Lucey, 2018). It is recommended that course designers and instructors develop online courses to increase opportunities for student-student and student-teacher interactions. For example, send a personal message when the course begins, create introductory activities, provide opportunities for learner interaction (e.g., study groups and shared portfolios), and encourage sharing through social media (Briggs, 2015). Autonomy-supportive instructional design and teaching strategies are recommended to enhance intrinsic forms of motivation (Ryan & Deci, 2017). Autonomy-supportive classrooms provide students with rationales, choices, and opportunities to take the initiative and responsibility in directing the learning experience (Ryan & Deci, 2017). For example, Lucey (2018) found when courses and materials were relevant to student careers and real-world situations, they were motivated to persist. Another approach is to use Appreciative Inquiry to increase intrinsic motivation. Appreciative Inquiry is a philosophical approach to curriculum and instruction design that allows students to talk about their successes and actively engage in conversations about what works in any given situation. This approach dismisses the notion that students are passive receptors of information and embraces the concept that students are co-creators of information and learning experiences (Assudani & Kilbourne, 2015). Appreciative Inquiry has proven to significantly increase intrinsic motivation in online instruction (Johnson, 2014; McQuain, Neill, Sammons, & Coffland, 2016). Designers and instructors can apply this approach in almost any area of study with open-ended questioning, creative problem-solving assignments, and group collaboration projects.

Conclusions

The first goal of this study was to develop student motivational profiles based on the constructs of SDT from the AMS. One hundred and fifty-eight bachelor's degree-seeking students at a 100% online, for-profit university participated in a cross-sectional, anonymous, online survey. A combination of person-centered and variable-centered approaches was used to analyze the quantitative data collected. Cluster analysis identified two unique student motivational profiles based on the constructs from SDT: an "externally motivated" profile with higher levels of external forms of self-regulation and amotivation relative to an "intrinsically motivated" profile with higher levels of intrinsic forms of self-regulation and lower amotivation. Similarly, Moreno-Murcia et al. (2013) identified two motivational profiles in physical education under the tenets of SDT using cluster analysis.

In conclusion, the present study contributes to the growing body of literature (Chemolli & Gagne, 2014; Howard, Gagne, Morin, & Van den Broeck, 2016; Liu et al., 2014; Wang et al., 2016) supporting the differentiation of motivation under the tenets of SDT (Ryan & Deci, 2017). The fact that students in this study had multiple forms of extrinsic and external regulation suggests research should continue examining the dynamic forms of bachelor's degree-seeking students at for-profit institutions as a method of investigating the problem of low graduation rates. In the meantime, practitioners should be aware of the important role they play in influencing learner motivation in the online, for-profit setting. Increasing efforts in curriculum design and instruction to promote more autonomy-supportive forms of education could lead to more intrinsic forms of motivation, which have been shown to buffer less self-determined types of motivation (Hartnett, 2016).

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Appendix A

Academic Motivation Scale (AMS-C 28) College (CEGEP) Version

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college.

Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly
1	2	3	4	5

WHY DO YOU GO TO COLLEGE?

1. Because with only a high-school degree I would not find a high-paying job later on.
2. Because I experience pleasure and satisfaction while learning new things.
3. Because I think that a college education will help me better prepare for the career I have chosen.
4. For the intense feelings I experience when I am communicating my own ideas to others.
5. Honestly, I don’t know; I really feel that I am wasting my time in school.
6. For the pleasure I experience while surpassing myself in my studies.
7. To prove to myself that I am capable of completing my college degree.
8. In order to obtain a more prestigious job later on.
9. For the pleasure I experience when I discover new things never seen before.
10. Because eventually it will enable me to enter the job market in a field that I like.
11. For the pleasure that I experience when I read interesting authors.
12. I once had good reasons for going to college; however, now I wonder whether I should continue.
13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.
14. Because of the fact that when I succeed in college I feel important.
15. Because I want to have “the good life” later on.
16. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.
17. Because this will help me make a better choice regarding my career orientation.
18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.
19. I can’t see why I go to college and frankly, I couldn’t care less.
20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.
21. To show myself that I am an intelligent person.
22. In order to have a better salary later on.
23. Because my studies allow me to continue to learn about many things that interest me.
24. Because I believe that a few additional years of education will improve my competence as a worker.
25. For the “high” feeling that I experience while reading about various interesting subjects.
26. I don't know; I can’t understand what I am doing in school.

27. Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.
28. Because I want to show myself that I can succeed in my studies.

Note. The AMS is a widely used (validated) and open permission scale. © Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, Nathalie M. Brière, Caroline B. Senécal, Évelyne F. Vallières, 1992.

KEY FOR AMS-28

- # 2, 9, 16, 23: Intrinsic motivation - to know
- # 6, 13, 20, 27: Intrinsic motivation - toward accomplishment
- # 4, 11, 18, 25: Intrinsic motivation - to experience stimulation
- # 3, 10, 17, 24: Extrinsic motivation - identified
- # 7, 14, 21, 28: Extrinsic motivation - introjected
- # 1, 8, 15, 22: Extrinsic motivation - external regulation
- # 5, 12, 19, 26: Amotivation