A Longitudinal Study of Online Learners: Shoppers, Swirlers, Stoppers, and Succeeders as a Function of Demographic Characteristics

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"Look at your past. Your past has determined where you are at this moment. What you do today will determine here you are tomorrow. Are you moving forward or standing still?" Tom Hopkins

Abstract

During the past decade, the convenience of online learning has afforded postsecondary students of all ages the opportunity to attend and complete online programs—especially to those students who have full and/or part-time employment, dependents, and those maintaining busy schedules. The benefits of taking online courses include flexibility, convenience, and cost-effective educational opportunities anywhere and anytime. Despite these well-known affordances, postsecondary institutions offering online courses are also fully aware of the challenges concomitant with this learning environment—most notably, student retention. Numerous studies have approached the retention, progression, and completion issue from a variety of angles attempting to predict, classify, identify, and increase opportunities for students to reach their personal academic goals. Rather than repositioning and assuming a new angle, the authors of this study chose to fuse these well established--yet isolated angles. Therefore, the purpose of this study was (1) to identify significant student demographic predictors among students who dis-enroll ("stoppers"), reenroll ("swirlers" and/or "shoppers"), and/or complete their online program of study ("succeeders"), and (2) to calculate the variance among the significant predictors.

Online Learning Evolution - Qua Vadimas?

Recent (and common) rhetoric refers to the swift changes in online learning as "revolutionary", "game-changing", or "the end of traditional higher education." Albeit well intentioned, these less-than-visionary perspectives fail to reflect upon educational history—routinely dismissing the valuable imprints made over time including "the achievements, failures, and meaning of their predecessor's work" (Pittman, 2012, p. 21). By doing so, we are disregarding the guiding frameworks necessary to support and inform educational advances. There exists no evidence in the history of distance education--or even traditional education for that matter, claiming past occurrences of explosive revolutions, tide-turning game-changers or the dismantling of higher educational institutions. What has been happening for a number of years (and is currently happening) is that education is evolving. Education's blind fixation to adopt the next fleeting

technological advancement is not only misdirected, it is this type of behavior that stifles true advancement. One example of this type of misguided focus is the Massive Open Online Courses (MOOCS) craze. One of the benefits about MOOCS is that these online learning variants are free-of-charge to students and thus, increasingly gaining worldwide attention. This comes as no huge surprise--especially in light of rising tuition costs that continue to plague higher educational institutions. Nevertheless, MOOCS are certainly not a revolutionary development in the world of education. Put simply, MOOCs are yet another form of online learning, they are free, and unfortunately, hold the title for the highest attrition rates among the postsecondary students who take them.

Although MOOCS currently also hold the popularity title, of particular interest is that this new evolution of online learning was surprisingly not pioneered by the highly revered elite universities, but rather, by smaller community colleges, for-profit universities, and lesser-known institutions (Snyder, 2013). Several years ago, these particular higher educational institutions immediately recognized the potential that online learning would provide to students and began planning for, and establishing infrastructures to accommodate this form of instructional delivery--while the rest of higher education has only recently realized this potential and therefore, have much ground to gain to remain competitive.

Online learning has undoubtedly changed how, when, and where students learn. These changes, in turn, have prompted those in education to reexamine quality, assessment, student learning and research supporting these areas. For example, gone are the days for the need to conduct research centered on student achievement comparisons of face-to-face learning to online learning. Extant research has shown mixed results with these comparisons—some studies finding positive results and some negative. A plausible explanation for this variation may reside within the consumers who choose either instructional environment—the students, and not necessarily the instructional environment used.

The Evolving Online Learner

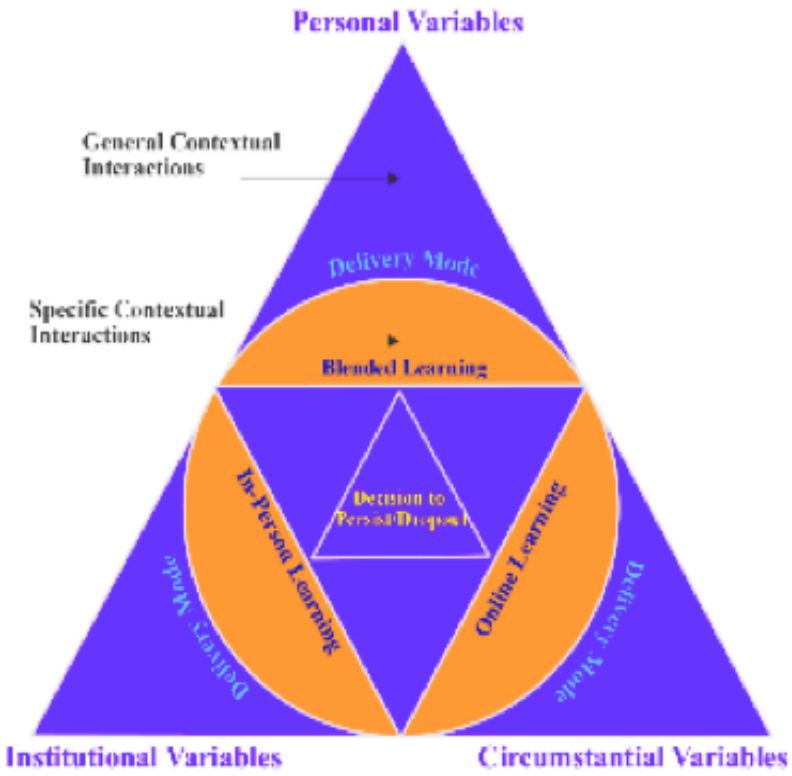
Much of the growth in online environments is attributed to nontraditional students—those who (1) attend part-time, (2) are employed in full time jobs, (3) delayed postsecondary enrollment, (4) are financially independent, (5) have dependents, (6) are single parents, and (7) may not have attained a high school diploma. Despite the overarching categorization of this attracted population, significant stratification exists beneath this umbrella. The research exploring this stratification is sparse, but growing—particularly due to issues around retention, progression and completion. Additionally, variance in the postsecondary systems in terms of student retention, progression, and completion of online learners exist as well. For instance, some institutional models of college retention place a greater emphasis on student involvement in single institutions than on integration into the system of higher education overall. This approach to college retention faces challenges with the growth of multi-institutional attendance and discontinuous enrollment. Other models rely on examining student behavioral patterns to predict potential disenrollment, thus disregarding a wealth of other documented factors contributing to student disenrollment. Online institutions must be mindful that courses taught in an online format hold many challenges for the learner and educator alike. Challenges such as computer literacy and navigation skills, greater electronic connection capabilities, and concerns over isolation are only a few examples illustrating possible barriers to student retention. Within online classes, students must not only learn the course material, but also the technology skills needed to participate in the class. The online learning format places the burden on students to initiate the learning process, and assume primary responsibility for the learning experience. Although this assumed responsibility may potentially lead to educational experiences that are stimulating and that encourage more critical thinking, unless there is a clear understanding of the online environment, students may be more inclined to dis-enroll from this type of learning platform. Unfortunately, institutions often do little to appropriately guide students as they select their course formats. Finally, some institutions place their focus solely on student demographic information to inform retention efforts and in the process, they alienate both behavioral and experiential factors impacting completion.

Persistence, Progression and Completion Research

Institutions have employed various surveys that measure variables in order to develop methods for increasing retention (Dynarski, 1999; Parker, 1999; Kemp, 2002; Astin, 1991). How institutions choose to measure variables that contribute to retention can be critical. The variables consistently cited as causes for dropout with traditional on-campus courses include pre-entry attributes such as gender, high school GPA, race and socioeconomic status (Peltier, Laden, & Matranga, 1999), while online learners more often cite student engagement, motivation, and environment as the cause of failure to complete courses (Iverson, 1995; Kember, 1990c; Moore, 1990a). Situational variables include computer skills and ability to use the Internet, reading ability and time management skills (Miller, Rainer, & Corely, 2003, Osborn, 2001; Rovai, 2003) and "such things as time constraints or family support" (Scalese, 2001, p. 17).

The authors of this study chose to use Berge and Huang's (2004) consolidated model of retention, progression and completions variables including: (1) *personal variables*, (2) *institutional variables*, and (3) *circumstantial variables*. Specifically, this model provides a holistic view that:

• encourages commitment (personal goal commitment, institutional initial and ongoing commitment);
• enhances integration (management and support services that enhance academic and social experiences);
• improves delivery systems (delivery of instruction and support in online, blended and in-person settings, e.g., instructional support services, student support services, staff development on proactive academic advising; institutional network) ;
• increases person-environmental fit (ease stages of transition, facilitate person-institutional, person-circumstantial and institutional-circumstantial fit); and
• improve outcomes (academic outcomes such as academic performance and intellectual development, psychological outcomes such as perceived utility and satisfaction). Figure 1 below illustrates Berge and Huang's (2004) consolidated retention model.



Personal variables. These include demographics that encompass age, gender, and martial status; as well as variables such as academic skills and abilities, motivation, commitment and locus of control (Rotter, 1966; Parker, 1999; Kember 1995). Emerging quantitative, qualitative and mixed methods approaches to retention-related research studies attempt to identify student patterns, pathways, predictors, and personal characteristics informing persistence, progression and completion. For example, using forward method linear regression, Boston, Ice, and Burgess (2012) uncovered six predictors for student disenrollment that included: (1) no transfer credit received by the student; (2) the total number of registrations/courses previously taken; (3) last grade student received was an F; (4) last grade student received was a W; (5) student GPA (3.01 – 3.99); and (6) GPA (2.01 – 3.00).

Gender. In terms of gender, while several studies have found no differences between males and females in terms of their learning outcomes in online courses (e.g., Astleitner & Steinberg, 2005; Lu, Yu, & Liu, 2003; Ory, Bullock, & Burnaska, 1997; Sierra & Wang, 2002; Yukselturk & Bulut, 2007), others have found that women perform significantly better than men (Chyung, 2007; Gunn, McSporran, Macleod, & French, 2003; Price, 2006; Sullivan, 2001; Taplin & Jegede, 2001). To explain the stronger performance of women within their study of online courses, McSporran and Young (2001) examined course observation and student survey data. They concluded that the women in their sample were more motivated, more adept at communicating online, and more effective in scheduling their learning. In contrast, male participants accessed fewer course website pages and fewer discussion forum posts; they also had poorer time management skills and tended to be overconfident in terms of their ability to complete learning tasks and assignments.

Ethnicity. In terms of ethnicity, Black and Hispanic students may perform more poorly than White students in online courses. If this is so, the pattern would certainly be due in part to the fact that Black

and Hispanic students tend to perform more poorly in college overall, given that they are systematically disadvantaged in terms of the quality of their primary and secondary schooling (Wiggam, 2004).

Age. In terms of student age, some studies have found no relationship between age and satisfaction or performance in online learning while others have found that older students are more likely to complete online courses than their younger counterparts (Didia & Hasnat, 1998; Wojciechowski & Palmer, 2005). For example, in one study of online learning, the average age of successful students was 28, as opposed to 25 for non-successful students. Colorado and Eberle (2010) have argued that older students' success in online learning may be due to increases with age in levels of rehearsal, elaboration, critical thinking, and metacognitive self-regulation, each of which may contribute to success in online coursework.

GPA. A student's grade point average (GPA) also lends important information on retention. A recent experimental study comparing learning outcomes between online and face-to-face sections of an economics course (Figlio, Rush, & Yin, 2010) found no significant difference between the two course formats among students with higher prior GPAs; however, among those with lower prior GPAs, those in the online condition scored significantly lower on in-class exams than did those in the face-to-face sections. That is, low-GPA students had more difficulty adapting to the online context than did high-GPA students.

Institutional variables. This category includes variables such as academic, bureaucratic and institutional social variables (Alexander, McKenzie, & Geissinger 1998). Also included are variables important to an institution's ability to respond to governmental regulations, economic conditions, workforce competition, etc. For example, during 2012, the online higher education market, and in particular, the proprietary online providers, continued to experience legislative scrutiny. The results of the national elections indicate that scrutiny will continue, and may be a focus when the Higher Education Act faces reauthorization in 2013. Also, changes to the 90/10 regulation will prompt higher education institutions to seek cash-paying students. Although recently declined, the Gainful Employment could re-emerge, therefore maintaining a focus on affordability, aligning curriculum with industry needs, expanding corporate alliances, and enhancing career services is imperative. Recent changes in the economy will have a positive impact on overall enrollments since particular aspects of economic downturns resonate closely with increasing demand for online courses with specific types of schools. Further, higher fuel costs will lead to more students selecting online courses.

Circumstantial variables. These variables include factors such as socio-economic conditions, academic and institutional interactions, social interactions and life situations. A critical issue in online learning retention is related to a student's sense of belonging (Braxton, Shaw, Sullivan, & Johnson, 1997). The group dynamics of online learning are an important factor in creating a safe and comfortable learning environment. Students in an online course should feel comfortable communicating and expressing themselves. It is important for retention that online students feel connected with the course, its instructor and fellow classmates. "Affiliation is a key to the development of a learning community" (Palloff & Pratt, 2001, p. 47). Frankola (2001) claimed that adult learners drop out of online courses due to the lack of time, lack of management oversight, lack of motivation, problems with technology, lack of student support, individual learning preferences, poorly designed courses, and substandard or inexperienced instructors.

Within the present educational landscape, institutions cannot afford to limit their definitions of, and responses to student disenrollment. Institutions must demonstrate earnest efforts toward understanding their students and identifying all aspects of the college experience influencing persistence, progression and completion. Because students come from varied backgrounds and take online courses for a variety of reasons, they may also choose various pathways toward course and/or program completion. Being able to recognize and support each student's personal, academic and professional goals must be included in long-term institutional strategic planning—regardless of the learning environment.

Clearly the literature presents a myriad of results, implications, and potential pathways to which student retention may be addressed; however, the authors of this study firmly believe that a re-examination of online learning and online students against online education's current backdrop is necessary in determining appropriate and innovative approaches to student dis-enrollment activity.

Today's Online Students - Characteristics and Patterns of the Stoppers, the Swirlers, the Shoppers, and the Succeeders

Historically, the aforementioned variables serve as a baseline for researchers who wish to further explore reasons for student dis-enrollment. The current study takes these variables a step further by applying characteristic behaviors and activities as they proceed along their academic paths. The authors of this study grouped: (1) the Stoppers, (2) the Swirlers, (3) the Shoppers, and (4) the Succeeders.

The Stoppers

Students who choose to voluntarily dis-enroll from educational endeavors, a.k.a. stoppers, do so for a variety of reasons. Many higher educational institutions present dis-enrolling students with an exit survey to collect information on reasons why the student is departing the institution. Some of theses self-reported causes for dropping out of courses include: work demands, discouragement/lack of motivation, cost, obligation to friends/family, lack of support from family and friends, lack of teachers to provide support, obtained more beneficial employment (thus negating the need for degree/certificate) and other life events.

The Swirlers

As definitions for the terms "retention" and "nontraditional learner" evolve over time, so will the implications these changing definitions have for higher education. Implications and subsequent efforts toward improving student retention have focused primarily on institutional degree programs rather than the characteristics of the students themselves (Anderson, 2011). One implication, in terms of enrollment, that higher education institutions are currently observing relates to student "swirling." Swirling is described as "the inconsistent flow in and out of college coursework from term-to-term, institution-to-institution" (Campbell & Mislevy, 2009, p.2-3). Further, while there are numerous institutional-and student-centric factors contributing to swirling and retention (Herzog, 2005; McCormick, 2003), these factors focus on traditional students and/or traditional brick and mortar institutions (Pascarella & Terenzii, 2005; Tinto, 1993). Some of these factors consider the role of life challenges, academic-related skills, student background and commitment to succeed (Anderson, 2011).

Additionally, methodological models vary—some approaching swirling retention strategies in a linear fashion, as others view and approach it as circular (Campbell & Mislevy, 2009). Underpinning the latter model is swirl theory, which acknowledges the complex nature of college enrollment intertwined with students' diversity in experiences. Concomitant to swirl theory, McCormick (2003) identified eight student swirling patterns: (1) trial enrollment; (2) special program enrollment; (3) supplemental enrollment; (4) rebounding enrollment; (5) concurrent enrollment; (6) consolidated enrollment; (7) serial transfer; and (8) independent enrollment. A student may trial enroll (stoppers) to determine the extent to which they are satisfied with the institution, but may transfer at a later time. Special program enrollment denotes a student who is enrolled at the home institution, but has the option to take courses at partner institutions. Supplemental enrollment (shoppers) refers to the ability for a student to enroll at another institution to accelerate their home institution program. Rebounding enrollment allows a student to alternate between two or more institutions. Concurrent enrollment allows a student to take courses simultaneously at two institutions. Consolidated enrollment is the grouping of courses in a degree program that students may also take at other institutions. A student opts to serial transfer by transferring from one institution to another—although mindful of a final institution where they will complete their program. Independent enrollment refers to students who take courses at an institution that do not

contribute to a degree program. Both in higher education policy and research, emerging forms of postsecondary attendance, broadly called "swirling" describe the many potential pathways that online students might follow. Students who disenroll from an institution for a period of time may return to their previous institution, transfer to a new one, or graduate. These various pathway options are many, as are the potential meanings and causes. Existing models of college retention, which focus only on factors affecting completion at the first institution attended, neglect to take into account student swirling. A system-wide model of degree completion should attempt to explain both retention and swirling, and identify factors promoting completion at any institution--not only the first school attended.

Those students who are likely to swirl may have contributing factors that may include financial resources, student-to-institution pairing, as well as other less observable characteristics. Indeed, colleges have increased their enrollment options partly in response to the changing demographic composition of the undergraduate and graduate population. Online institutions are mindful that current student populations are on average, older, less economically secure, and more often female; therefore enrollment policies are often responsive to these perceived student demographics.

The Shoppers

Recently, higher education institutions have observed a phenomenon of the student as a “secret shopper.” These are prospective students who are actively researching, comparing, and narrowing down their college choices. To avoid unwanted pressure by enrollment recruiters (much like sales people do in retail stores, car dealerships, online advertisements, etc.), students remain anonymous up until they’ve made their final decision. Appearing to be solely an enrollment issue rather than a retention issue, student shoppers are literally, doing their homework on universities to ascertain the best fit for them—at that particular moment. This implies that students are in the driver’s seat and can easily disenroll from their current university if another presents itself in a more appealing light. The current reality for student shoppers is that no longer do they need to provide impressive academic credentials to their desired university. Conversely, the tables have drastically turned due to online course offerings and new patterns of student behavior related to this learning platform. Students today are customers developing their own paths to learning—and, on their own terms.

The implications for this phenomenon are many. Institutions must reshape traditionally held perceptions of their current and future clientele. Presently, students are the consumers, and universities are selling the product, therefore universities must use this business model to target students and more importantly, retain students based upon data such as: (1) geography, (2) geodemographic (household income, ethnicity, educational level), (3) likelihood-to-enroll scores identified through “post-purchase” modeling, and (4) likelihood-to-enroll scores that include additional “pre-purchase” data. This type of varied data combinations will essentially reach, and appeal to students at the diversified times and places when and where they may be searching for information.

Purpose of the Study

The overall purpose of this study was to longitudinally (1) identify significant demographic predictors among students who dis-enrolled, reenrolled, and completed their online program of study, and (2) calculate the variance among the significant predictors. Given the complexity of ever-evolving technological advances pertaining to online learning and the implications they induce, acquiring the aforementioned information is detrimental to student success. Further, the results of this study will help to encourage online institutions to (1) continually survey their constituencies, (2) analyze the possibility for new variables to emerge (and thus include in future surveys), (3) compare retention, progression and completion patterns over time, and then (4) devise strategies that respond to this new information. An additional purpose of this study was to align the significant demographic predictors to possible national trends and environmental drivers impacting the evolution of online learning and online learners. By coming closer to identifying and connecting this information, we come that much closer to promoting student achievement.

Research Questions

This study used descriptive statistics and multiple regressions to analyze student characteristics as a function disenrollment, reenrollment, and completion in online environments at APUS from years 2006 through 2012, to answer the following research questions:

RQ1: Are there significant demographic predictors among students who dis-enrolled (stoppers) reenrolled (swirlers and shoppers), and completed their online program of study (succeeders)?
RQ2: What amount of the variance accounted for those students who re-enrolled (swirlers and shoppers), and completed their online degree program (succeeders) as a function of the aforementioned significant predictors?

Method

Participants and Procedure

This research study involved the extrapolation of existing APUS records including: 1) all degree-seeking (control variable) undergraduate and graduate students who completed at least one course (control variable); 2) student data collected upon application for admission (e.g., gender, enrollment age, ethnicity, marital status, etc.); and 3) continuously updated data such as courses enrolled in, GPA, withdrawal from courses, credits earned, etc. To ensure anonymity and confidentiality, the Student ID number was used to identify each participant in the study. The selection of variables depended upon the available data from APUS's database, and several were selected and included from prior research studies as contributing factors to student academic success in online courses.

Given the various environmental factors impacting online learning over the years, the authors of this study chose to extract enrollment/disenrollment/reenrollment and academic student data over a six-year period (2006-2011), with an opportunity for reenrollment spanning into 2012, with a total n of 43,938. A total of thirteen variables were examined including: (1) enrollment age; (2) gender; (3) ethnicity; (4) military/civilian status, program; (5) GPA; (6) academic program (7) current academic status; (8) transfer credits; (9) credits attempted; (10) credits earned; (11) the ratio of credits earned to credits attempted, and (12) length of disenrollment. Regression analysis with forward entry was utilized, with any variable that accounted for less than 1% of variance discarded. The above variables were entered as predictor variables, with dummy variables utilized where necessary. The criterion variable was a binary with students who disenrolled and had not reenrolled being counted as a 0 and those who did reenroll being counted as a 1.

Key Findings

The table below illustrates the significant demographic predictors (with an r-square > .01, and standardized coefficient betas.

Table 1
Forward Regression model for 2006-2011 Data Sets

Significant Predictors with variance greater than 1%	R-Square	Standardized Coefficient Beta
Transfer Credits	.163	.244
Credits Earned / Credits	.141	.238

Attempted		

With respect to transfer credits, students who reenrolled had an average of 36.3 transfer credits, while those who did not reenroll had an average of 11.2 transfer credits.
The credits earned to credits attempted ratio for those who reenrolled was .781 and .596 for those who did not reenroll.

Conclusion and Future Directions

The finding that transfer credit was a significant predictor of reenrollment was not surprising given previous research at APUS related to disenrollment trends. Specifically, it is well recognized that APUS students who have at least some transfer credit are far more likely to remain enrolled than those who do not. Therefore, the finding that students who had a higher number of transfer credit were more likely to return to their program of study than those with a lower number of transfer credit appeared reasonable, as the former group of students were significantly closer to achieving their goal of degree attainment than the later group.

The credits earned to credits attempted ratio was particularly interesting for two reasons. First, while a ratio of .781 reflect the fact that these students have earned credit for slightly more than 75% of courses completed it also represents a large percentage of attempted courses that the students did not complete. Therefore, we must surmise that significant personal factors make this group of students want to complete their course of study, beyond a moderate level of success with previous courses. Second, while almost 20 percentage points lower the ratio for students who did reenroll, the ratio for non-reenrolled students was surprisingly high, relatively speaking. Surprisingly neither credits attempted or credits earned were found to be significant predictors on their own.

It is likely that within the population of students who did not reenroll there are one or more subgroups that fall into the various definitions of swirlers, however, this analysis failed to tease them out. Specifically, it is reasonable to expect that some of those who failed to reenroll were simply taking courses as transient students, but did not declare as such so they could take advantage of financial aid. Future studies need to address this through integration with the National Student Clearinghouse and inspection of students who have a high credits earned to credits attempted ratio. These students would likely be inflating the GPA and ratio variables for the group that failed to reenroll, making the differences more pronounced if they could be sorted out.

Future studies need to focus on a enhanced segmentation of the non reenrollment group to discern what currently quantifiable characteristics may distinguish the various classes of stoppers and swirlers. Additional personal attributes lending to persistence, progression and completion that include non-cognitive variables should also be the focus of future work. These include:

- *Uneven formal academic knowledge and skills.*
- *Lack of informal knowledge about being a college student.*
- *Inadequate development of self-regulation skills.*
- *Impaired self-efficacy and resilience.*
- *A mindset believing in fixed rather than flexible abilities.*
- *Inability to delay gratification.*
- *Impaired ethical judgment.*
- *Disengagement from the university environment.*
- *Lack of interest in courses.*
- *Issues in academic trajectory.*
- *Psychological issues.*

Discerning patterns related to these variables will be far more difficult as they will require substantive qualitative work to create a class of quantifiable variables that can be analyzed across large numbers of

students.

Limitations

The nature of reenrollment is not yet well understood and may include complex life factors that do not easily fit within quantifiable or predictable constructs. As such, this study is limited by the range of the data collection period and may well not account for students who will return at some later date. Along these lines, this data was collected from a period in time in which the economy has experienced significant fluctuation; going from moderate to high unemployment, with a trend line now improving again. The fact that many students go back to school during times of high unemployment and return to the labor force when they can find meaningful employment should be considered a potentially major latent variable in this study.

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