Student Attrition: Consequences, Contributing Factors, and Remedies

Ascend Learning, LLC
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What is Attrition?

Student attrition tends to be a systematic concern for many types of higher education programs such as nursing (Deary et al., 2003; Wells, 2003; Wells, 2007), other allied health programs (Dodge et al., 2009; Gillis, 2007), and online certification programs (O'Brien, 2002; Yukselturk & Inan, 2006). While student attrition may be more specifically defined within a particular field, it is generally characterized as the departure from or delay in successful completion of program requirements.

Tinto (1975) is credited with developing one of the first models for studying student attrition and persistence in higher education. Based on his Student Integration Model, he defined student attrition as "a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems…continually modify his goals and institutional commitments in ways which lead to persistence and/or to varying forms of dropout" (1975, p. 94). Tinto's definition demonstrates how student attrition can involve many interrelated factors and studying those factors that lead to attrition can be a complex process.

Consequences of Attrition

For most fields, it is easy to see the relevant and critical consequences of student attrition. Attrition is a concern for any type of educational or certification program in that costs are incurred with respect to time, resources and tuition for students, faculty, institutions and other members of society (Bennett, 2003; Schneider & Yin, 2011). In a longitudinal five-year study that ended in 2009, the American Institute of Research (AIR) concluded that state and local governments spent approximately 3 billion dollars to help pay for the education costs of students who dropped out of community colleges (Schneider & Yin, 2011). Adding in federal appropriations allocated to these students, costs were estimated to be almost 4 billion dollars (Schneider & Yin, 2011). This does not account for the costs that students themselves pay "out-of-pocket" for tuition, fees, materials, etc. Based on these

estimates, it's easy to see how the costs of student attrition can be a formidable problem for any type of educational program.

Furthermore, when students drop out of programs, often times, their "seats" remain empty for the duration of the program which means that when the program is complete, there are fewer graduating professionals entering the workforce (Gillis, 2007). In the nursing profession and other allied health fields, the dearth of available and qualified professionals to meet the health care needs of society continues to be a concern (McGillis, 2005; Urwin et al., 2010; Wells, 2003). The consequences associated with student attrition in certification and licensure programs are also problematic in that expectations from human capital have changed and employers expect job applicants to possess certain skills and knowledge that are often only acquired through certification training (Yukselturk & Inan, 2006). From these perspectives, "state governments as well as the federal administration have focused on improving student retention and completion in all forms of higher education as a means of increasing the skills of the workforce to better meet the challenges of a global economy" (Hirschy et al., 2011, p. 300).

Measurement Issues

Unfortunately, there are fundamental methodological problems associated with studying and measuring attrition (Deary et al., 2003; Glossop, 2001). The most pressing concern with studying student attrition tends to stem from the fact that within any given field, a common definition of attrition may not be used. As Cook (2010) noted, the lack of a common method for calculating attrition across programs of study and degrees makes it difficult to analyze attrition throughout higher education. In fact, the United Kingdom (UK) Central Council for Nursing Visiting (1999, p. 57) addressed this issue by recommending that a common definition of student nurse attrition be established and requiring

programs to collect and maintain a minimum dataset of student information across the four countries of the UK so that attrition rates could be systematically analyzed (cited by Deary et al., 2003).

Another major methodological limitation to studying student attrition is the difficulty in ascertaining the reasons why a student discontinued a program (Deary et al., 2003; Dodge, et al, 2009; Glossop, 2001; Tinto, 1975). Access to those that have dropped out of a program may be difficult to attain and surveys sent to these students typically suffer from low response rates (Glossop, 2001). Furthermore, inventories used to collect data from students that have discontinued are only as good as their items and often times, imprecise definitions of reasons for leaving do not provide reliable data for drawing meaningful conclusions (Deary et al., 2003; Glossop, 2001).

Lack of attention to potential relationships between factors that impact students' decisions to leave a program also limits the research on attrition. For example, personal reasons for leaving a program may cover a myriad of circumstances which may (or may not) have influenced other types of reasons for leaving. Personal reasons such as inability to cope with stress and burnout or low educational ability may contribute to academic failure. However, former students may simply report academic failure as the reason for leaving which makes it difficult to not only discern potential programmatic factors from personal ones but also to understand the interaction between the two (Deary et al., 2003, p. 73).

Finally, when applicable, comparing attrition rates across institutions (even with a common definition) may be misleading in that institutions and programs may have varying admissions policies and serve different types of populations of students. Unless every factor that could potentially impact attrition is accounted for, systematic comparisons and generalizations of differences in student attrition rates may not be completely justified (Dodge et al, 2009).

Factors Contributing to Attrition

Following Tinto's (1975) Student Integration Model introduced earlier, the basic elements that tend to define student attrition include characteristics of students that appear to impact persistence and attrition, programmatic characteristics associated with student dropout, and characteristics related to students' interactions with the program.

Characteristics of Students

In their model of student success in community college environments, Hirshy et at. (2011) differentiated student characteristics as stable or malleable. Stable characteristics include "…socio-demographic attributes (e.g., race, ethnicity, gender, age, parental education level, ability to pay, and domestic partner status), precollege academic preparation and performance (e.g., high school grades, high school curriculum emphasis on vocational or academic classes, high school rigor, and performance on academic placement and aptitude exams), and student commitments to and responsibilities to their work, family, and community" (Hirshy et al., 2011, p. 311). On the other hand, malleable student characteristics include those that the program or setting is likely able to influence such as "…student dispositions and skills (e.g., motivation, self-efficacy, locus of control, coping skills, resilience, and study skills) and educational and employment goals and intentions" (Hirshy et al., 2011, p. 311). Although college programs and policies can address malleable student characteristics, they also can provide effective support for students with certain stable characteristics.

Characteristics of Program

As Tinto (1975) originally pointed out, it is the characteristics of an institution or program such as its resources, facilities, structural/organizational arrangements, and its members, that can limit or facilitate the development and integration of individuals within the institution or program. In a summary of research on student attrition in online education programs, Yukselturk & Inan delineated

several program-related reasons for discontinuing which included course schedule and pacing, insufficient feedback, quality of learning materials, lack of interaction between students and instructors, inexperienced instructors, lack of social integration, and lack of student support (2006, p.77).

One characteristic of any educational program that invariably influences its student attrition rate is the program's admissions process and criteria (Dodge et al., 2009; Glossop, 2002; Newton & Moore, 2009; Tinto, 1975). That is, the procedures used to select students into a program have an impact on the characteristics of the student population. If admissions criteria are set at a minimum and a large number of students are accepted that just meet the minimum requirements, chances are that attrition rates will increase.

In the field of nursing, research continues to support the use of admissions tools and criteria that can be used to effectively differentiate between students that will be successful in nursing school from those that will not be successful in order to help address student attrition issues (ATI, 2012; Newton & Monroe, 2009). Similarly, for other allied health disciplines, Gillis (2007) suggested more stringent admissions criteria for one institution's health sciences undergraduate programs and claimed that changes to the recruitment and admissions process may help decrease attrition rates. Regardless of the type of program, defining the population of students prior to admittance into the program can have a direct impact on student attrition rates.

Interaction between Program and Student

Finally, and perhaps most importantly, attrition is often the result of the interaction between student and program characteristics (Tinto, 1975). That is, student integration into the program, from an academic and social perspective, is often needed to achieve student success (Dodge et al., 2009; Tinto, 1975; Wells, 2003; Wells, 2007). For instance, the literature suggests that positive relationships between nursing students and faculty are crucial to student retention and success in nursing programs

(Wells, 2007). Furthermore, students also frequently find that their expectations of what a program will entail do not match up with what they actually experience once in the program and this type of disillusionment has been found to be a contributing factor to student attrition (Wells, 2007). Students that believe that they have made the right program choice tend to have higher levels of motivation which is, in turn, related to persistence in completing program requirements (Dodge et al., 2009).

How to Mitigate Attrition

Student attrition appears to be a concern for various stakeholders within almost every educational context. In general, attrition can be costly for all involved and programs need to not only identify but also address factors that are contributing to attrition. Wells stated that "…the problem of student attrition should be addressed with new vigor and new commitment" (2003, p. 230) in order to reduce attrition rates and associated costs to society.

What Can Programs & Educators Do?

There are several strategies, policies and processes that educators and programs can implement to ameliorate student attrition. Based on the contributing factors at the program level, educators and institutions can:

- Take steps to ensure that course scheduling and pacing meets the needs of the student body, to the most practical degree possible
- Provide students with high-quality resources to support learning
- Provide students with high-quality, interactive instruction
- Provide professional development that encourages instructors to establish positive relationships with their students
- Provide opportunities for students to socialize and connect with other students
- Provide financial support and other services such as daycare when possible

- Establish admissions criteria that best meet the standards for the desired student population
- Prior to enrollment, provide students with sufficient and *realistic* information regarding the program and the profession so that expectations are not inconsistent with reality

What Can Products Do?

Products, inventories and tests can also help address student attrition in education and certification programs. Educational products can address student attrition in one of two ways:

- inventories and tests can be used to collect student-level data for the purposes of informing decisions related to reducing attrition; and
- products can be used to support learning and teaching activities which are ultimately intended to help students succeed.

At the onset, assessments can be used to help differentiate students that are likely to be successful from those that are likely to be unsuccessful based on students' level of academic preparedness for a particular program (ATI, 2012; Sawyer, 2010). Using performance on assessments in conjunction with other admissions criteria such as previous courses taken, grade point average or previous work experience, can help define the population of students admitted into a program which can impact student attrition.

Once students are admitted and are participating in a program, student inventories can be used to collect data on how well they are coping within the program (Deary et al., 2003). Data can be collected on a regular basis to monitor and evaluate any trends in student level characteristics as well as student interactions with the program that may be contributing to attrition (Gillis, 2007). This type of data could also potentially be used to help identify students are at-risk of leaving the program.

Throughout the course of a program, supplemental products and materials that are intended to support learning and teaching activities can also help mitigate attrition. For instance, when students

are struggling with difficult concepts or need further instruction on a particular topic, educational products can be used support that learning. Technological innovations have made it possible to incorporate various types of learning supports into educational products such as student-level feedback, adaptive instruction, and focused review. In addition, to supporting struggling students, educational products also help promote student engagement by providing more opportunities to study and learn. As research has shown that students who are actively engaged in their learning, have greater academic success (Peter, 2005), it's easy to see the value in products that support and supplement learning.

Finally, data can also be collected upon exiting a program (Gillis, 2007; Glossop, 2002a) in order to learn more about students' reasons for leaving. Glossop (2001) found that "the introduction of an exit interview procedure to monitor students' leaving reasons resulted in great improvements in the quantity and quality of information being collected, not only within this school, but also compared to previous research studies" (2001, p. 383). While exit interviews or surveys can suffer from low response rates, some have found them to be rather successful at obtaining information from students (Glossop, 2001; Glossop, 2001). Collecting this type of data over time using reliable and valid instruments can also help ensure that changes and improvements to the program are making a difference in reducing student attrition (Gillis, 2007).

What Can ATI Nursing Do?

Assessment Technology Institute (ATI) offers several products that can help reduce student attrition in nursing programs. ATI's pre-admissions test has been shown to effectively help identify students that are likely to be successful *and* persist in nursing school based on their level of academic preparedness. Furthermore, ATI offers a myriad of products that are intended to support learning and teaching activities in order to help students succeed. The strong combination of products listed below can help your students succeed by identifying early on who may be struggling and by providing

solutions to assist those students. Please visit www.atitesting.com for more information about any of these products.

- Pre-Nursing School:
  - Test of Essential Academic Skills (TEAS®)
  - Achieve™
- During Nursing School:
  - Nurse Logic®
  - Learning System
  - Content Mastery Series®
  - Focused Review®
  - Remediation Templates
  - Skills Modules Series
  - Dosage Calculation and Safe Mediation Administration
  - Pharmacology Made Easy

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