

Comparison of Student Retention Models in Undergraduate Education From the Past Eight Decades

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Student retention and completion rates are challenging issues in higher education. In the academic domain, pressure exists for every institution to come up with strategies that support student success from enrollment through graduation without compromising academic or accreditation standards. This paper presents the findings from a review of student retention models dating back to over eight decades to identify the key factors for retention. Specific recommendations for adaptive and sustainable retention agenda are made. Critical implications of this review directly impact institutional policy makers, researchers, faculty, and decision makers and provide a framework for the development and implementation of viable, adaptive retention initiatives and strategic plans.

Key Terms: College Dropout Model (CDM); Student Attrition Model (SAM); Student Integration Model (SIM); and Student Mortality Model (SMM).

USE OF LANGUAGE AND TERMINOLOGY

While there are no standard definitions of retention, persistence, or attrition, scholarly definitions have been reviewed (Noel-Levitz, 2008; Seidman, 2005, Ch. 4). In this paper, the definitions of the major terms are conservatively expressed as follows: *Attainment* – reaching the desired goal toward which the learner has worked; *Attrition* - loss of students from all forms of higher education before completion of their program of study; *Completion* - successfully finishing, realizing, accomplishing, achieving, or fulfilling a program of study to reach the desired goal; *Dropouts* - college students who enroll, but leave college and do not return or do not stay until graduation (Boshier, 1973); *Persistence* - a phenomenon whereby an individual student successfully fulfills specific course requirements leading to graduation; *Retention* - broadly, this is an institutional characteristic, whereby students remain and consistently re-enroll all the way through graduation; and *Stakeholders* - refers to practitioners in the education retention agenda: faculty, staff, administrators, advisors, donors, alumni, public, private companies, students and/or their families.

INTRODUCTION

Student retention, persistence, and graduation are major and ongoing strategic concerns in colleges and universities (Adelman, 1999; Braxton & Hirschy, 2005; Seidman, 2005; Marsh, 2014). Student retention is an issue of national importance, and the quest to develop more efficient ways to support student success remains a fundamental goal for every institution of higher education. This is a broad and complex issue that, despite decades of research, academic institutions continue to struggle with in realizing effective programs to reduce student attrition rates (Swail, 2004; Braxton & Hirschy, 2005). The diversity of this topic includes traditional and non-traditional students (Bean, 1985; NCES, 2013), online learners (Rovai, 2003), two-year (Bryant, 2001) and four-year college students (Strauss & Volkwein, 2004), transfer students, minority student populations (Seidman, 2005), and many others.

Generalizations about retention can be misleading due to the uniqueness of each institution, academically, culturally, and otherwise. The major obstacle is a lack of integrated efforts to better understand student retention, where stakeholders at all levels of the institution become involved in redefining and modifying their retention programs. The retention agenda is further complicated by the lack of uniform standards/

metrics that define student success (Bean, 1990). Further, predictors of student success are varied and include: the student intention to persist; institutional policies; student commitment; student academic achievement; academic history; high school experience; and social integration. There is an increasing number of traditional and non-traditional students seeking and expecting alternative higher educational opportunities (NCES, 2013). Students drop out for a multitude of reasons including, but not limited to, academic challenges, social issues (Spady, 1970; Bean, 1980; Berger & Lyons, 2005), and financial reasons (Schneider & Lin, 2011). Added to the mix are the diverse educational and socioeconomic backgrounds among students and what they bring into the learning environment.

The portrait of today's student is fundamentally different from the past and continues to evolve (Levine & Dean, 2012). For instance, the prospective college graduate of today may have any of the following: several transcripts from multiple institutions that are later combined into a single degree transcript; complete alternative/specific courses to enhance workforce skills, rather than for graduating purposes. Some students enroll in college simply to "*see how it feels*" rather than having a graduation agenda; or take other classes online in addition to traditional face-to-face classes. Added to the mix are multiple degree transfer pathways, a relatively new academic avenue of advancement in the educational enterprise.

Retention is a strategic issue for institutional success that attracts a variety of stakeholders, such as federal, state, and private parties, and influences institutional rankings. The millennial workforce and the new generation of students constantly require adaptive and evolving student-centered approaches for their success. The completing agenda needs to be modified beyond the traditional idea of getting a college degree, completion of the baccalaureate degree, or transfers out of the institution. The retention agenda depicts a complex interaction of the characteristics of an institution's culture, its practitioners, and the student.

The primary aim of this paper is to review the background and structure of student retention strategies for the past eight decades. The two secondary objectives of this paper are to suggest new retention strategies based on available evidence and propose an adaptive retention culture that permeates across all educational institutional players.

OVERVIEW OF STUDENT RETENTION MODELS

STUDENT ATTRITION AND INTEGRATION MODELS

Over the last eight decades, many writers and scholars have proposed several models and frameworks to explain student retention rates in post-secondary education. Consistent themes include academic, non-academic, socio-economic, and institutional factors. Briefly, from the 1970s to about 1999, two main conceptual models emerged to guide thinking about student retention and persistence: Student Attrition

Models (SAM) and Student Integration Models (SIM). The SAM proposed that the events that occur before a student's departure from the college are beliefs that shape attitudes that affect the decision to remain enrolled or to drop out of college. The SIM proposes that the decision for a student to drop out or continue to enroll is strongly influenced by the degree of academic factors (grades, motivation, values, roles, etc.) and social integration (friendships, connections, interactions, etc.).

CRITICAL COMPONENTS OF SAM AND SIM MODELS

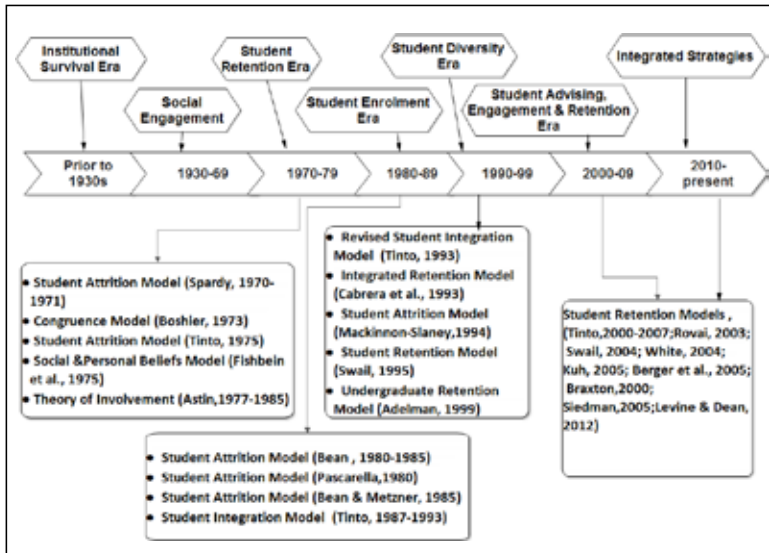
Tinto's SAM (1975) suggested a "*good fit*" between the students' intent and the institution is a key factor in student persistence and attrition. This considers both formal and informal interactions and experiences. In a revised SIM model, Tinto (1993) identified three primary sources of student departure, namely, academic difficulties, the inability of students to fulfill their educational and workforce goals, and their failure to integrate into the social culture of the institution. The missing part in Tinto's models is the influence of factors external to the institution on student retention.

In particular, Tinto's SAM was an expansion of Spady (1970-1975), who examined dropout rates in higher education. Key to Spady's research was the interaction between student attributes (e.g., dispositions, interests, attitudes, and skills) and the university environment (influences, expectations, and demands). In the same year, Fishbein and Ajzen (1975) researched models that focused on the importance of student intentions, based on beliefs and specific implied behavioral influences of retention, perceptions, experiences, and attitudes experienced before or during the college years. Five years later, the concept of student attitudes, student intentions, actions, habitual versus reasoned behaviors, and knowledge was reviewed (Fishbein & Ajzen, 2010).

Bean (1983-1985) suggested the link between student attitudes and behaviors and modified a theory by Fishbein and Ajzen's Social, and Personal Beliefs Model (SPBM) in 1975. Students' intentions and attitudes were used to predict subsequent retention rates. Tinto's (1975) and Bean's (1982,1985) models gave rise to new research on student retention and completion to include minority students, students of color, first-time college students, students who commute to campus, two-year college students, four-year college students, transfer students, non-traditional, and general adult students and graduate students

Boshier's Congruence Model (1973) detailed the reasons for dropout in adult learners as based largely on socio-economic, psychological, and institutional factors. Cross & McCartan, 1984 identified the following barriers for adult learners: family responsibilities; financial issues; health challenges; and commuting to college. In the same year, Bean (1983) and Pascarella (1980) independently worked on issues concerning student/faculty informal communication. They found a strong positive relationship between quality of student-faculty informal communication and students' educational intents, attitudes, academic successes, personal development, and persistence. The frameworks and models spanning the last eight decades are summarized in Figure 1.

Figure 1: Historical timelines of student retention strategies for the past eight decades. Broadly, these are: before the student retention era, the social engagement era, and institutional survival era. More recently, student diversity and motivation has brought about a variety of institutionally driven strategic issues (e.g., advising, mentoring, counseling, enrollment, financial aid and grants, etc.).



KEY COMPONENTS OF STUDENT RETENTION MODEL

The seven broad eras emerging from this eight-decade analysis and shown in Figure 1 comprise the following: before 1930; 1930–1969; 1970–1979; 1980–1989; 1990–1999; 2000–2009; and 2010 to present. The SAM models (Bean, 1980, 1990) and SIM (Tinto, 1975, 1993) are some of the most widely used frameworks to examine student transition, attrition, and departure up to the present day. Also, the College Dropout Model (CDM) by Tinto (1975) focused on financial and social barriers and institutional support strategies, which also deserve mention in this abbreviated history. However, these models and frameworks have evolved over time in response to changing student demographics and diversity (van der Werf et al., 2009). As a preface to this discussion, the difference between the SAM and SIM is all about the relative importance attributed to student retention factors external to the institution. Table 1 shows a summary of different models and the important concepts that are identified with the models.

Table 1: Summary of Models, Frameworks, and Key Ideas

Models	Key Ideas and Focus	Key Reference(s)
Student Mortality Model(s) (SMM)	College size and time it takes a student to complete a degree.	McNeely (1937)
Student Attrition Model(s) (SAM)	Student-student and student-campus interactions; Student intentions, motivation, experiences, and external institutional factors on student attrition and persistence; Academic and non-academic factors, including pre-college variables and student social integration in college; The right fit between student and institution in which they are enrolled.	Spady (1970, 1971) Bean (1980, 1983) Tinto (1975, 1982) Pascarella's Attrition Model (1980)
Student Integration Model(s) (SIM)	Modification of SAM of 1975. Academic challenges, student-institutional fit, and the failure of students to resolve their educational and occupational goals as reasons for student's departure. Student social life and academic life. Attrition issues for adult learners.	Tinto (1987, 1993) Pascarella & Terenzini (1979) MacKinnon-Slaney (1994)
Theory of Involvement (TI)	Student involvement in college where enrolled, and institutional policies.	Astin (1968, 1985)
Social & Personal Beliefs Model (SPBM)	The importance of student intentions, beliefs, and behavioral influences.	Fishbein & Ajzen (1975)
Student Faculty Interactions Model (SFIM)	Student-faculty informal interactions.	Pascarella (1980)
Dropout Syndrome Model (DSM)	The combination of student's intent to leave, actually leaving, and actual attrition.	Bean (1985)
College Dropout Model (CDM)	Combination of financial barriers, Social barriers and Institutional support strategies.	Tinto (1975)

Astin (1968, 1987) presented a comprehensive study of how students' behaviors and attitudes change as they develop in college and achieve academic excellence. Educational programs, faculty, student peer groups, students' college experiences, and institutional culture all influence the shaping of a student's personality, behavior, values and beliefs, and, ultimately, overall development. Astin (1993) proposed the Inputs, Environment, and Outcomes (IEO) model. The main conclusions were that assessment and evaluation activities in the classroom setting enhance learning. These provide necessary feedback to both educators and learners. In particular, the core concepts of this model are that educational assessments are not complete unless the evalua-

tion includes information on the student's educational IEO. Also, Astin (1985, 1993) also created five basic tenets of student involvement and development: psychological and physical investment; continuous investment; quantitative and qualitative investment; learning outcomes tied to quality and quantity of involvement; and educational policy effectiveness in motivating students. These concepts have widespread applications in higher education institutions and complement other classic theories of student development. The Student Development Theory (SDT) of Pascarella and Terenzini (2005) revisited and improved on this concept.

The central institutional implication of the models presented above is that academic stakeholders need a social engagement agenda for their students. Research inspired by these models has focused on single-institution studies and, thus, ignores the influence of differences in institutional dynamics. Tinto (2012) advocated for an improvement agenda directed at fixing institutional gaps instead of disadvantaging students. Institutional and faculty strategies focused on redesigning students' classroom experiences were found to be key factors in improving student retention and completion.

It should be noted that most of the models of student attrition that were developed before 1990 contained some sweeping generalizations and lacked specific student demographic data. After the 1990s and 2000s, student diversity, race, equity, online education, two-year, and four-year college students were added to the retention matrix. According to Braxton (2000, 2005), more than 25% of the students who entered four-year institutions and 50% who entered two-year institutions left at the end of their first year. Drawing on the student retention work of Tinto (1987), Tinto (1993), and Braxton (2000) presented a modified model of college student persistence by exploring the relationship between Astin's (1975, 1987) theory of involvement and Tinto's (1987) theory of student departure. Scholars researching the first year experience were added to the retention agenda (McInnis, 2001; Bean, 2005).

Pascarella and Terenzini (2005) developed and expanded on their earlier findings from the 1980s and 1990s regarding how students grow and develop during college. In particular, a variety of critically important student outcomes, such as cognitive and intellectual growth, psychosocial change, moral development, and career and economic impacts of college, are covered. Seidman (2005) examined some areas critical to the retention of students, including history, theories, concepts, and models. The financial implications and trends of retention are analyzed, and the retention of online students and community colleges are combined in modeling student success. Levine and Dean (2012) analyzed today's undergraduate college students by examining their expectations, aspirations, academics, attitudes, values, beliefs, social life, and politics. The major conclusion is that today's students need a very different approach than the undergraduates who came before them, which requires a radical shift in institutional culture. More recently, Levine and Dean (2012) conducted comprehensive research on college

students in quantitative and qualitative longitudinal studies spanning three decades. Renn and Reason (2012) analyzed student demographics, enrollment patterns, campus environments, and a range of possible outcomes related to learning, development, and achievement. A slight modification of the same analysis performed by Astin (1968) found that differing experiences, needs, and expectations of traditional students, non-traditional students (e.g., adult and returning learners, veterans, and immigrant populations) are important in student retention efforts. Currently, typical retention efforts comprise recruitment and admission strategies; orientation strategies; and early assessment and placement strategies focused on the “first-year experience.” According to Crosta (2013) and Bean (2005), developing effective retention and dropout prevention strategies requires a clear picture of who these early dropouts are.

DISCUSSION

Student learning outcomes refer to specific objectives that students achieve as a result of learning opportunities. These include the integration of past and current research and evidence-based strategies that support student success from enrollment through graduation. The major problem is that most institutions are reactive and not proactive concerning retention policies and strategies. Dealing with an increasingly diverse student mix that draws from different cultures, with a wide age range, various life experiences, and varying levels of academic preparation can be a daunting task (McInnis, 2001). Data-driven student retention indicators benchmark reports and surveys are publicly available (NCES 2013-2015; Noel-Levitz, 2013; OEDb, 2013). Students at risk predictive models and student success predictors can also be modeled and monitored.

Effective retention and completion initiatives need to constantly scan the internal and external environments to better understand student needs, allocate resources efficiently. That way, institutions continuously improve their programs, and regularly evaluate their business model(s). Good practices in undergraduate education are recommended, and have been reviewed elsewhere (Koljatic & Kuh, 2001). Now, building on the “*Nine Themes on College Student Retention*” (Bean, 2005; Seidman, 2005) and incorporating the “*Seven Principles for Good Practice in Undergraduate Education*” (Chickering & Gamson, 1989) are the most effective, efficient, and scalable retention strategies are suggested. Briefly, these authors emphasized the need to encourage student-faculty interactions, practice active learning techniques, provide prompt feedback, and emphasize time on task. Communicating and promoting high expectations and respect for diversity were constant themes. Details on student motivation for them to participate actively in all aspects of the educational process are beyond the scope of this article, but have been reviewed elsewhere (Noel-Levitz, 2013; Demetriou & Schimitz-Sciborski, 2011).

Integrated student successes are a set of overlapping favorable or desirable student outcomes whose indicators in higher education include student persistence and retention, agenda completion, achieving program outcomes (i.e., when students achieve satisfactory or superior levels of academic performance), institutional support of the learning environment, and useful advice. The questions to answer at each stage are: Why are students in college? How best can we prepare them for an increasingly knowledge-based and globally competitive landscape? How can we accomplish this without compromising standards and keep up with accreditations? Fulfilling the answers to these questions calls for robust and sustainable initiatives, such as early assessment programs and targeted advice (advisory services). Problems and potential challenges can be identified, and mechanisms put in place to support student success.

RECOMMENDATIONS: REDEFINING THE RETENTION AND COMPLETION AGENDA

The completion agenda refers to broad-based reform initiatives led by institutions, academic practitioners, state and policymakers, herein referred to as “stakeholders.” The objective is to increase the number of students completing or attaining their diplomas or certificates. In this article, historical accounts of the processes that enhance student completion rates have been examined and summarized. The main recommendations include the need for academic success and retention to be re-defined and expanded to reflect the typical millennial student. Also, data-driven models for predicted probabilities of degree completion rates need to be integrated and shared. Institution-wide monthly/yearly updates of dropouts need to be shared and discussed across academic disciplines. Where possible, exit interviews need to be carried out to have a better understanding of sources of dissatisfaction from the affected parties. A reflective, adaptive, sustainable retention and completion culture must permeate across all institutional players and students. Having a personalized agenda as a strategic retention tool is also advocated by these authors. With increasing numbers of international students at U.S. institutions, immigration issues, and financial constraints are constant themes real world of international education, and these need constant review and assessment.

Issues addressed relate to how colleges can succeed in understanding the types of students they are enrolling all the way through graduation. Although traditional thinking about transfer involves a single sequence from a two-year college to a university, institutions need to respond to the complex needs of students today, who often attend multiple institutions, some of them concurrently, as they work toward their academic requirements and, ultimately, graduation. Added to this is the online education that provides them with convenience.

Understanding the types of students and their needs should be a strategic imperative for academic institutions if they are to limit drop-

out risk factors. Full-time students, part-time students, working adults, and non-traditional students struggle to balance their work and higher education with very complex lives. Temporary situations whereby students voluntarily interrupt their enrollment for one or more terms/semesters and re-enroll at another institution are not adequately captured in the graduation agenda. There are several reasons that contribute to this equation: employment, social issues, financial constraints, and unintended situations that develop during their academic journey. Heyl & Damron (2014) in their scholarly article "*Should I Stay or Should I Go?*" succinctly put it as follows: "*Navigating the tension between competing pressures and priorities can put anyone in an 'emotional bubble,' insulated from more rational decision making.*"

In its current rendition, the retention agenda removes these student populations from institutional success factors even if they come back and graduate or if they launch successful initiatives elsewhere. Academic institutions that succeed in the retention agenda have a better relationship with their students and redefine student success in the light of the new millennial student. Finally, we note that the new reality of the higher education puzzle represents a fundamental shift in student demographics, needs, experiences, academic, social, and psychological behaviors, and any retention agenda should not compromise the quality and standards of excellence in education.

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