13:5 A Model for Sustainable Student Retention: A Holistic Perspective on the Student Dropout Problem with Special Attention to e-Learning

Editorial

Increasingly, the focus in higher education is on outcomes, rather than structures. "Student success" has become one of the primary factors in discussions of higher education quality, especially the quality of online programs. Although student success has been defined in a variety of ways, most definitions include the idea of persistence to the completion of the student's program. Thus, increased retention becomes the goal of many of an institution's quality assessment and improvement efforts.

In this month's article Drs. Berge and Haung propose a customizable model of student retention that takes into account personal, circumstantial, and institutional factors, as well as the interconnectedness of these factors. The authors suggest that the model can provide useful guidance for institutional—and to some extent students' personal—decision making.

A Model for Sustainable Student Retention: A Holistic Perspective on the Student Dropout Problem with Special Attention to e-Learning

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This article introduces a comprehensive model to assist institutions in planning for interventions to

address student dropout and to increase student retention. The model is the result of an extensive

review, analysis, and synthesis of research and theoretical studies. It is flexible and represents a

comprehensive set of factors related to student retention, categorized in meaningful ways, and can be

used at multiple levels: institutional, departmental or program, by individual faculty, or by students. The

need for a model of this kind has long been recognized because, as Woodley and Parlet (1983, cited in

Cookson 1989) stated, there is a systematic problem involving the institution as a whole. The problem

involving retention of students is not due to an isolated factor that can be "fixed," but rather imagination and care must be used to carefully select interventions that are needed at various points throughout the organization.

Retention of students at the course, program, or degree level has been a timeless concern of educators. The lack of retention, or dropout, has historically challenged educational systems and seems to be especially acute in distance learning. Historically, the percentage of students who drop out of brick and mortar higher education has held constant at between 40-45% for the past 100 years (Tinto 1982). In the online learning context, dropout rates appear to be higher than for traditional courses. While there are no national statistics for completion rates of distance education students, dropout rates are believed by some to be 10 to 20 percentage points higher than for in-person learning (Carr 2000; Diaz 2002; Frankola 2001).

As e-learning moves from a marginal to an integral part of the overall educational and training arenas, questions and interventions related to learner success (however "success" is defined) are of both theoretical and practical importance (Powell et al. 1990). In the workplace the focus is usually directed at why a learner drops out of a specific training event, and interventions are aimed at improving training effectiveness. In higher education, the problem of a student's lack of persistence is complex and multi-dimensional.

The large body of research with a wide variety of theoretical frameworks and models thought to explain, describe or predict student persistence, points to the fact that there is no one simple explanation or solution to help students towards degree completion or fulfillment of their goals. Variables and strategies

regarding learner success should be considered at the individual, course, program, institutional, or systems level (Gilbert 2000).

This article reviews the multi-dimensional phenomena of retention of students in higher education from a number of different perspectives.   The article discusses conditions that influence institutional effectiveness in reducing dropout, factors that influence students' performance and contribute to a student's decision to leave formal education and training, and the role of faculty and staff regarding the impact on students' decisions to persist. From a thorough review of prior theory and research, a new, holistic model is presented within the e-learning context that shows the relationship among these elements, factors, and circumstances.

Student Retention Defined

Defining "retention" is complex and problematic. This is reflected in the large body of research containing inconclusive and often contradictory results. Retention studies typically address degree completion versus non-completion (IRP 2003). However, retention in terms of program completion is only relevant for some classes of students. For others, learning success is most pertinent to achieving *their* objectives of participation (Kerka, 1988). Definition of retention is further complicated by different measures adopted by the respective organization. For the purpose of this review, we will adopt working definitions of retention, attrition, and persistence as follows:

> * *Retention* is continued student participation in a learning event to
>
>> completion, which in higher education could be a course, program,
>>
>> institution, or system.

* *Attrition* is a decline in the number of students from the beginning to the end

of the course, program, institution, or system under review.

* *Persistence* is the result of students' decisions to continue their participation
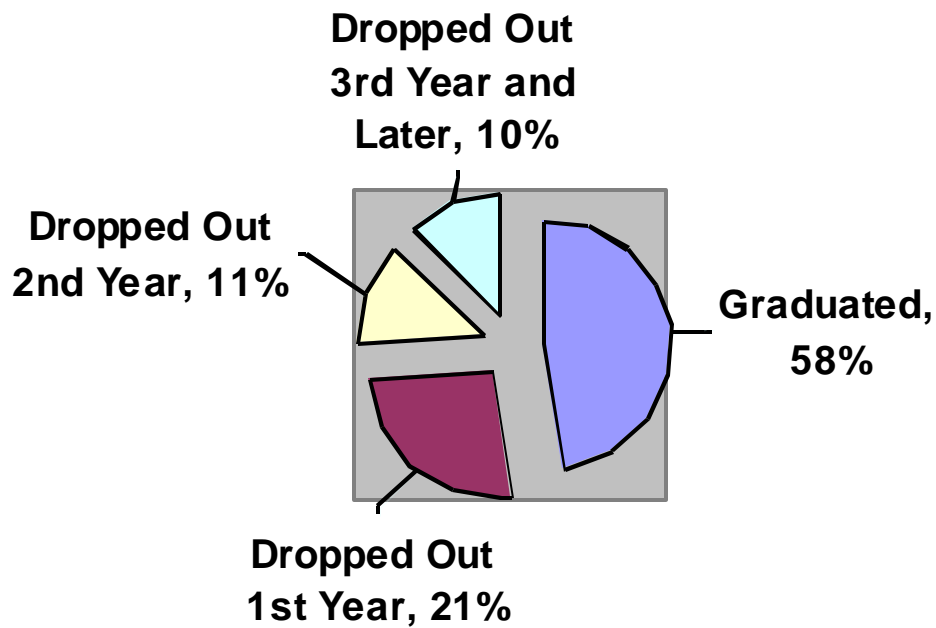
in the learning event under analysis.

For *policymakers and administrators*, understanding factors or conditions helps ensure institutional

effectiveness in lowering attrition. For *faculty and staff*, understanding factors or conditions that

influence students' performance and decisions to drop- or stop-out, helps promote interactions that will

likely yield positive impact upon students' decision. For *students*, understanding factors or conditions

helps develop strategies in meeting challenges, creates positive learning experiences, and maximizes the

potential for reaching their learning goals.

Research on Retention

Student retention has been actively researched for over 7 decades, resulting in a substantial body of

information on the factors associated with student persistence/dropout, and indicating a wide spectrum

of interventions aiming to improve retention. Retention research traditionally concentrates on analyses

of graduation rate, examination of persistence patterns, investigation of student attrition behaviors,

analyses of historical trends and facts, and explanations of the psychosocial dynamics associated with

retention (IRP 2003). Researchers and practitioners have also developed models and instruments to

assess, predict, and enhance student retention. Figure 1 reflects data (CSRDE report[1] 2000-2001, pp. 1-

3) that indicate:

* Freshman year is the most crucial period for student retention, with 21%

dropping out during, or at the end of, their first year (see Figure 1).

* While degree completion requires more than four years for most students,

the eventual degree completion rate for entering freshman was

estimated to be 58%.

* Institutions with a higher percentage of part-time undergraduate enrollments

tend to have lower retention and graduation rates.

* Retention and graduation rates were consistently higher for women.

**Dropped Out
3rd Year and
Later, 10%**

**Dropped Out
2nd Year, 11%**

**Graduated,
58%**

**Dropped Out
1st Year, 21%**

Figure 1. Drop Out Rates by Year in College

Scholars have adapted various theoretical frameworks to construct models that explain, describe or

predict student persistence, attrition and retention. These frameworks include:

* *Sociological perspectives* that focus on the influence of various social forces

    on college student departure or withdrawal (see for example Bank, Biddle,

    and Slavings 1992).

* *Organizational perspectives* that focus on the influence of organizational

    characteristics and processes on college student departure or withdrawal

    (Sarkar 1993)

* *Economic perspectives* that focus on the influence of cost/benefit analysis on

    college student decisions to persist or to depart (Tillman, Sr. 2002)

* *Psychological perspectives* that focuses on the influence of psychological

    characteristics and processes on college student departure (Braxton 2000,

    pp. 260-263).

Various directions have been taken by many of the researchers with descriptive and/or prescriptive

models developed to enhance retention. Early studies on retention in higher education were written

within a cause-effect context with a descriptive section on cause and a prescriptive section for solutions.

Astin's (1970) student involvement theory and Tinto's (1973) student integration theory and model were

two such examples. Later research efforts expanded to include a variety of themes and factors

influencing retention. One example is the shifting focuses from students' actions to institutional

variables and interventions in facilitating retention. Another example is the expansion of focus from

traditional to "non-traditional" students at different strata within the student population in higher

education (Filkins, et al., 2001):

* Minority students (Bean and Hull 1984; Fuertes and Sedlacek 1994; Grandy 1998; Nora 1987;

    Ting 2000)

* Commuter students (Johnson 1997)

* Graduate students (Cooke, Sims and Peyrefitte 1995; King and Chepyator-Thomson 1996)

* Two-year college students (Bers and Smith 1991; Pascarella, Smart and Ethington 1986)

* Transfer students (McCormick and Carroll 1997)

* Non-traditional and adult students (Bean and Metzner 1985; Shields 1994)

The current trend in research appears to be to validate or reject previous theories and models, emphasize the influence of developmental factors on success in college, and incorporate retention issues in distance education. Themes of developmental factors often focus on psychological, maturational, and dispositional variables of students. Additional factors, such as economic- and financial-impact, academic aptitude, student-faculty interactions, and student services have also been explored by researchers in recent studies.

Models of Retention

Many student retention studies examine the flow of students through formal education over a discrete period of time. Four categories of student outcomes were typically identified and discussed in this type of study (Boyles 2000; IRP 2003):

* *graduates*, those students who complete a bachelor's degree

* *persisters*, those students who are continuously enrolled over a period of time

* *stopouts*, those students who leave and subsequently return

* *dropouts*, those students who leave and do not return

A variety of descriptive or prescriptive "path models" have also been developed to address student retention/attrition issues:
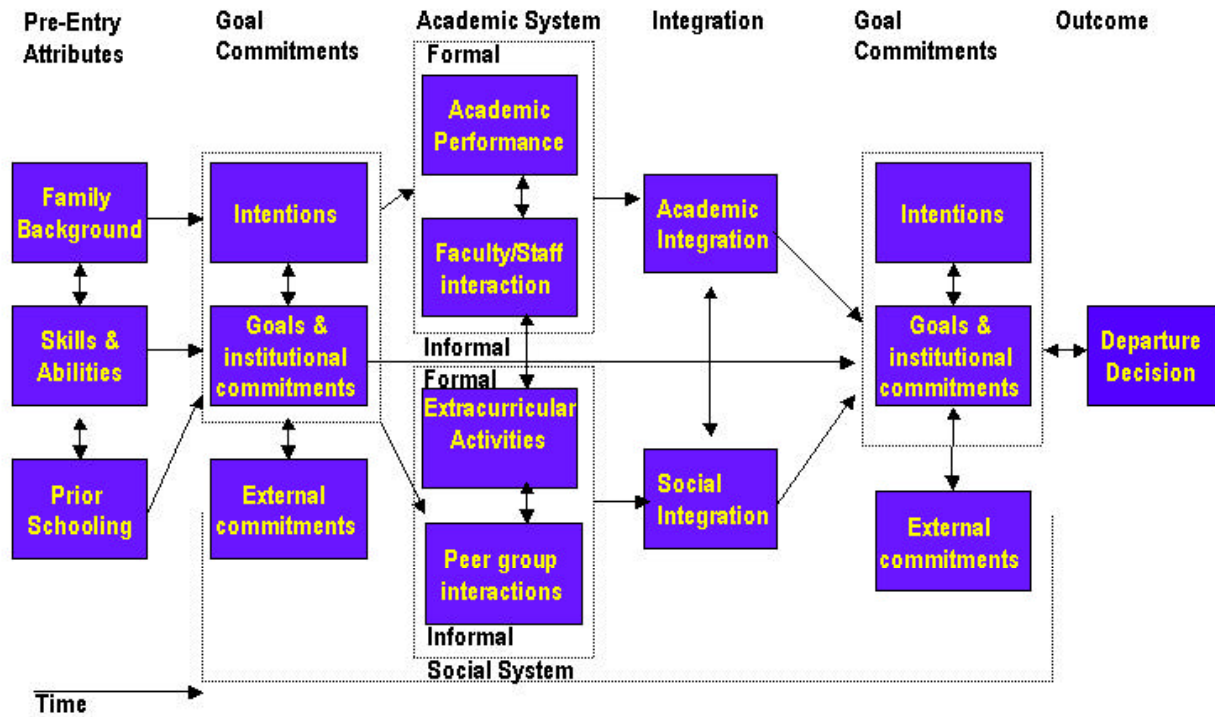
* Explanatory Sociological Model of the Dropout Process (Spady 1970)

* A Model to Explain Adult Education Participation and Dropout (Boshier 1973)Longitudinal Model of Individual Departure (Tinto 1975, 1993)Conceptual Model for Research on Student-Faculty Informal Contact (Pascarella 1980)

* Conceptual Model of Dropout Syndrome (Bean 1985)

* Non-Traditional Student Retention Model (Bean and Metzner 1985)

* Validation of Tinto's Model (Sweet1986)

* Model of Dropout From Distance Education (Kember 1989)

* A Multivariate Framework for Analyzing Success and Persistence in Distance Education (Powell, Conway, and Ross 1990)Conceptual Model for Retention of Community College Student (Stahl and Pavel 1992)

* The Model (Boyles 2000)

The Longitudinal Model of Individual Departure developed by Tinto (1975, 1983, and 1993) (see Figure 2), is a good example of these path models.[2] Tinto's theory of student departure is one of the most influential in the study of college-student departure (Braxton, Sullivan and Johnson 1997). The model attributes an individual's decision of retention/dropout to pre-entry attributes, the student's goals and commitments, and academic and social institutional experiences and integration (Tinto, 1973). His *student integration theory* (1975, 1982, and 1993) was widely adopted and debated in later studies to explain the process of college departure.

Figure 2. Longitudinal Model of Individual Departure (Replicated from Tinto, 1987, p. 114)

Models of Retention in e-Learning

While the study of retention in distance education is not new, the study of e-learning retention is a relatively new area for research. Most of the existing models of retention were built on retention research of campus-based traditional learners and non-traditional learners. Examples of models developed to address retention in distance education include those developed by Boshier (1973); Bean and Metzner (1985); Sweet (1986); Kember (1989); Powell, Conway, and Ross (1990); and Boyles (2000).

In a recent review, the Institute for Higher Education Policy (IHEP 1999) suggested that current research did not adequately explain why dropout rates in distance education are higher than with in-person education. Factors affecting retention or attrition decisions are complex and constantly evolving. In today's environment, the understanding of retention is becoming even more complex, particularly with the changing landscapes in learner demography, roles, and responsibilities; learning opportunity, needs and perceptions; and modes of instruction and learning. Procedural differences at the institutional level in measuring retention rates (Gilbert 2000; Kember 1981, Roberts 1984) further complicate the issues, and often led to inconclusive results in empirical 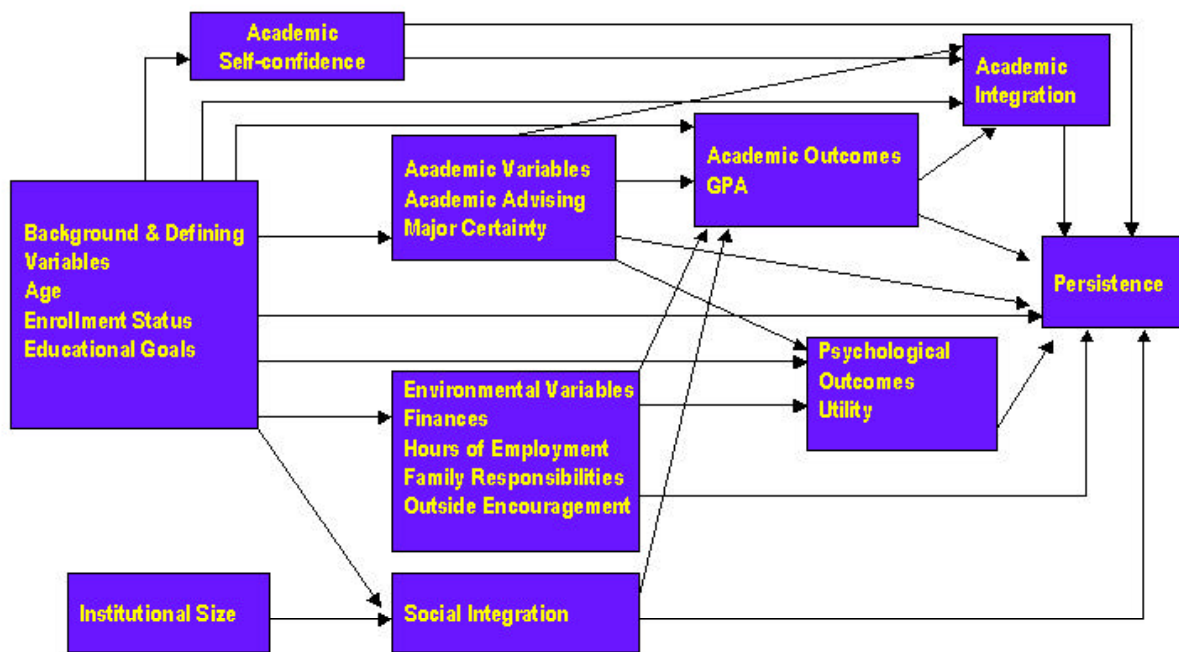studies. Still, there is no shortage of theories. Corporate e-learners for example, reported that the following were their top reasons for dropping out (Frankola 2001):

    * Lack of Time

    * Lack of Management Oversight

    * Lack of Motivation

    * Problem of Motivation

    * Lack of Student Support

    * Individual Learning Preference

    * Poorly Designed Course

    * Substandard/Inexperienced Instructor

As an example of a model developed to accommodate e-learning, The Model (Boyles 2000) (see Figure 3) consists of three sets of variables: background and defining variables, environmental variables and academic variables. It also contains seven singular variables: academic self-confidence, academic

integration, academic outcome (GPA), institutional size, social integration, psychological outcomes, and

utility. This model was developed based primarily upon the Metzner and Bean (1987) path model with

additional variables such as institutional size (Napoli and Wortman 1998), academic self-confidence

(Webb 1989), and academic integration (Pascarella and Chapman 1983). This model was designed to

address retention issues that are most relevant at the institutional, particularly community college, level.

The Model
(Boyles 2000)

Figure 3. The Model (Replicated from Boyles, 2000, p. 67.)

Reviewing the research and theoretical literature has shown the complexity and multi-dimensional

nature of the retention phenomenon. Powell stated that "even sophisticated multivariate studies have

been hampered by the use of a limited range of measures and a lack of standardized measures, and the use of single items to measure broad concepts" (Powell et al. 1990, p. 23). Given the current, early stage of theoretical development and empirical research in e-learning, there is a need to develop a holistic approach to the description and study of retention that takes into account the experiences of learners and the unique aspects of the distance learning context.

The large body of research (see for example Sarkar 1993; Tillman 2002) on the wide variety of variables thought to related to student retention for both in-person and e-learning, points to the fact that there is no one simple explanation or solution to help students' decision making process towards degree completion or fulfillment of their goals. Researchers have tested various theoretical models that looked at academic and social integration of students on campus, the importance of teaching, learning/study skills, use of resources and services, financial aid and family influences and so forth. Table 1 lists the variables addressed in a variety of retention models (Bean 1985; Bean and Metzner 1985; Boyles 2000; Pascarella 1980; Spady 1970; Stahl and Pavel 1992; Tinto 1975, 1993).

Personal Variables	Institutional Variables	Circumstantial Variables
Demographic Variables Age, Gender, Ethnicity, Residence, Family income/socioeconomic status, parental educational level and parental expectation **Individual Variables** Academic Skills and Abilities, Motivation, Goals & Commitment **Prior Educational Experiences** Record of academic achievements Prior schooling experiences	**Bureaucratic Variables** Mission & Policy Budgeting & Funding Institutional Awareness & Participation **Academic Variables** Structural System Normative System **Social Variables** Social System Mechanisms for Social Integration	**Institutional Interactions** Bureaucratic Interactions Academic Interactions Social Interactions **Interactions External to Institution** Life Circumstances Work Circumstances Family/ Socio-Economic Circumstances
Academic Outcomes + Psychological Outcomes **Voluntary/ Involuntary Decision on Persistence/Drop-out**		

Table 1. Variables Addressed in the Various Retention Models

An early result of the literature review, on which the model presented below is based, was the indication that much of the research on factors correlated to dropout can be associated through the three clusters of variables shown in Table 1:
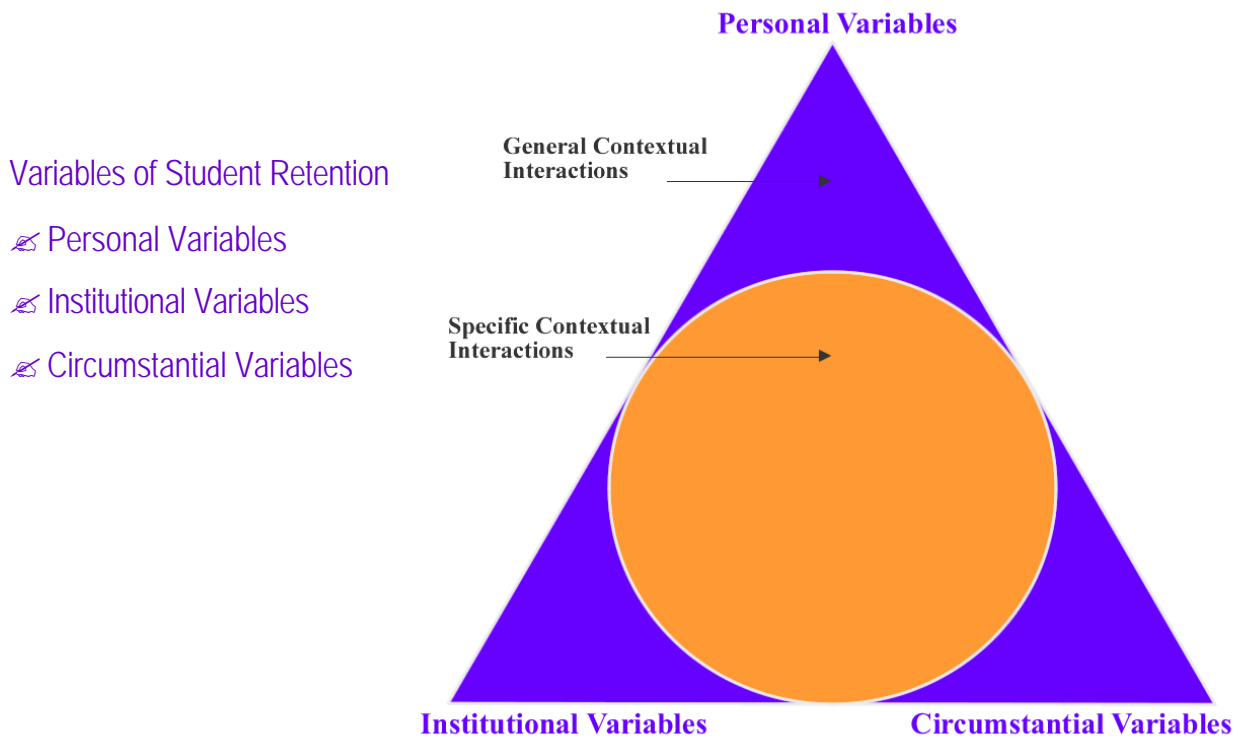
1. Personal Variables

2. Institutional Variables

3. Circumstantial Variables

Model of Sustainable Student Retention: A Context-Sensitive Approach

The model proposed here is a dynamic and customizable framework that takes into consideration the significant variables and the interconnectivities among personal, institutional and circumstantial factors. The framework factors address variables that institutions can manipulate to enhance student retention. This open-ended model is constructed to be *inclusive* in accounting for a large proportion of the possible variables (such as those listed in Table 1). It is designed to ensure that no significant variables are

overlooked, and to indicate interactions among variables that should be considered. How the variables are prioritized or weighted is dependent upon the circumstances that pertain for the business unit or person using the model, regardless of whether that is an institution, a department or program, or an individual student.

The model is grounded in previous research and is innovative in at least two ways: 1) it is inclusive and context sensitive, and 2) it features a dual-approach towards retention enhancement. When a voluntary decision is being made to persist or dropout, (i.e., as opposed to involuntary suspension due to such things as failing grades or disciplinary actions), it is made *by the individual student,* influenced by his or her personal circumstances. It is based upon the student's continual cost/benefit analysis of all social, organizational, economical, and psychological factors like those resulting from perceived opportunity, relevancy, stress, responsibility and satisfaction within the educational context. Even though the earlier path models are useful when explaining many aspects of the dropout phenomenon, yet another path model would probably not be significantly helpful. A snapshot derived from this model for a particular individual may change rapidly, even from one day to the next in some circumstances.

Personal Variables

General Contextual Interactions

Specific Contextual Interactions

Variables of Student Retention

✍ Personal Variables

✍ Institutional Variables

✍ Circumstantial Variables

Institutional Variables   **Circumstantial Variables**

Figure 4. Framework for Sustainable Student Retention.

Inclusive and Context Sensitive

One of the reasons why the research on variables affecting retention among distance education students has shown contradictory results may be due to a unique combination of variables within the particular educational context under investigation. Thus, our model allows adopters to address variables as they are deemed relevant. The three primary areas of the triangle shown in Figure 4 represent the context that includes personal variables, institutional variables and circumstantial variables and the interactions among them. *Personal variables* encompass a spectrum of student factors like the demographic

characteristics of age, gender, ethnicity/race, family income/socioeconomic status, parental educational level and parental expectation, individual attributes (e.g., academic skills and abilities, learning strategies, motivation, task value, self-efficacy for learning and performance; and prior educational experiences). *Institutional variables* include factors such as organizational characteristics, the prevailing institutional attitude, values and beliefs; academic characteristics like structural and normative systems and integrations; and social characteristics such as the degree of congruency and integration between the individual student and the social system of the institution. *Circumstantial variables* involve factors such as institutional interactions, academic interactions, and social interactions, as well as interactions external to the institution such as life, work and family circumstances, and perceived stress, responsibilities, and levels of satisfaction.

The model is context sensitive. For instance, if an institution has, or hopes to attract, a high proportion of non-traditional students, decision-makers must consider that those students are more likely to be affected by factors external to the institution such as the job or family. It would then follow that, from the institutional perspective, making child/family care options available may be particularly important to consider if trying to recruit and retain non-traditional learners in in-person classrooms, less important in blended classrooms, and not relevant at all in online classrooms.

Dual-Approach toward Retention Enhancement

The framework takes a unique approach that both enables the identification of variables most relevant to an institution's context and stresses institutional interventions that could be most relevant for enhancing student retention. As represented by the path models discussed earlier, most of the current research focuses on the identification of existing variables and subsequent prediction of student drop/retention.

While such approaches have led to a better understanding of the phenomenon, they seem to be ineffective and difficult for institutions to adopt. So at its core, our model addresses all three clusters of relevant variables, (i.e., personal, institutional, and circumstantial), indicating actions that institutions could take to enhance student retention.

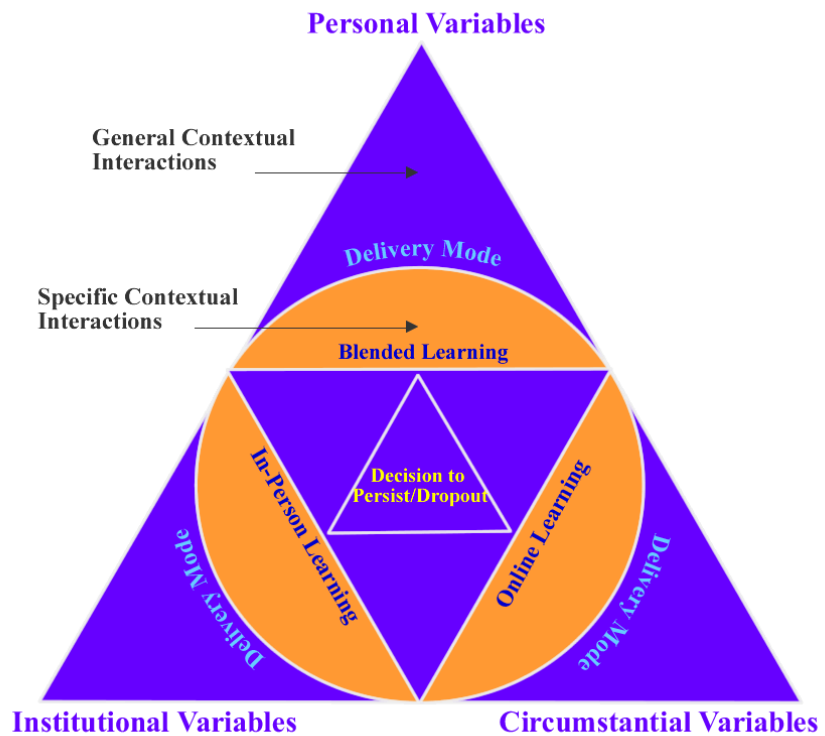**Demonstrating the Model Using Delivery Mode as an Example**

For this model to be effective from an institutional intervention perspective, the stakeholders at the particular institution must discuss and prioritize the variables based upon their individual institutional business objectives. For this purpose, the model guides a planning process, rather than indicating a static, generic framework.

As an example, suppose an institution knows one or more of its online courses has a significant dropout problem. With the increasingly diversified student population, learning needs, delivery modes (such as in-person, blended, or online learning[3]), and delivery formats (such as traditional programs, weekend and evening programs, accelerated programs, online and distance course delivery), institutions of higher learning are often reconsidering which strategies are most appropriate for improving retention and graduation rates (Tharp 1998). For this example, data at a particular institution seem to show different rates of retention depending on the delivery mode (in-person, blended, and completely online) that is used. The stakeholders for these courses would like to discover why this is happening, and plan some interventions to increase retention.

Using our model, "online," "blended," and "in-person" are terms that describe three types of learning delivery modes that are becoming increasingly important as institutional variables affecting retention/attrition outcomes in higher education. By further incorporation of learning environmental factors, this model enables stakeholders to take a holistic and dynamic view of retention of students in the three delivery modes. The framework aims to:

* Encourage commitment (personal goal commitment, institutional initial and ongoing commitment)

* Enhance integration (management and support services that enhance academic and social experiences)

* Improve 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)

* Increase person-environmental fit (ease stages of transition, facilitate person-institutional, person-circumstantial and institutional-circumstantial fit)

* Improve outcomes (academic outcomes such as academic performance and intellectual development, psychological outcomes such as perceived utility and satisfaction)

Retention of Students in
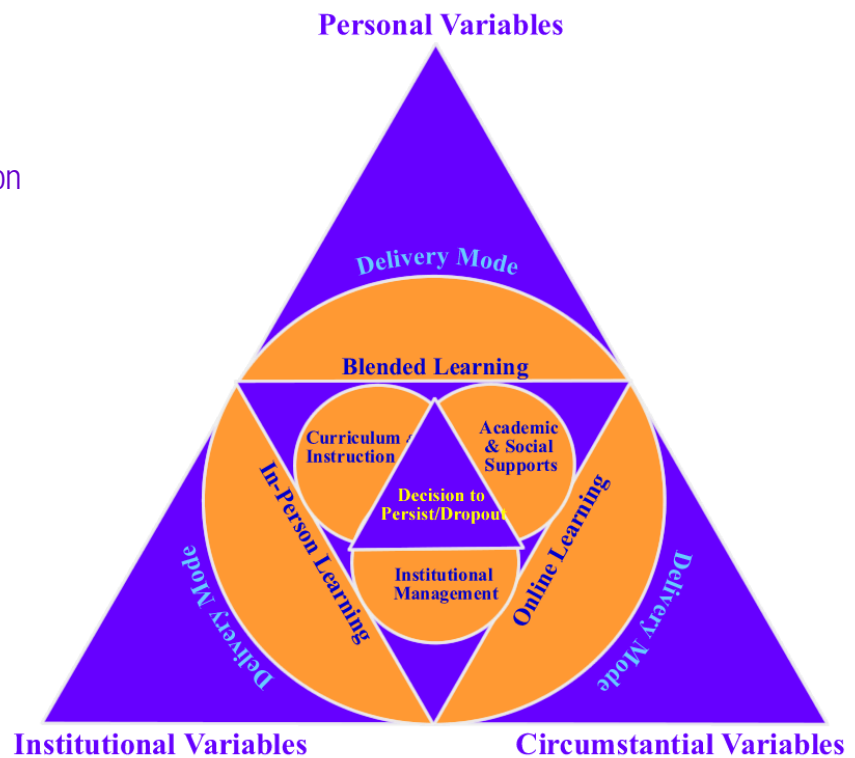? Online Classrooms
? Blended Classrooms
? In-person Classrooms

Figure 5. Sustainable Retention Model Example Using e-Learning.

Within the general context of personal, circumstantial, and institutional variables, one can focus on a

particular issue, concept, or concern. While exploring the concept of delivery mode the largest circle in

Figure 5 indicates the specific context for decisions (both personal and institutional) regarding delivery

mode. From an institutional perspective, when determining what interventions can be made to increase

retention each of the variables in Table 1 need to be discussed by the stakeholders within the context of

"delivery mode" in this case.

Interventions to Enhance Retention

- Institutional Management
- Curriculum & Instruction
- Academic & Social Supports

Figure 6. Sustainable Retention Model Example Using e-Learning with Additional Detail.

From the institutional perspective, as shown in Figure 6, there are areas such as curriculum and instruction, academic and social supports, and institutional management, which the institution can support in order to affect the retention rate. To reiterate, from the example above it is hoped the reader can see that using this model as a framework for the planning process *within a particular organization* is more important than any static, generic model that could be designed by someone outside the specific organization.

Separately, from the individual's perspective *at any given time*, all factors in the general context and in the specific focus area are weighed and affect the decision to persist or dropout. It is possible that an *individual* could work through this model and each variable during decision-making, but it is less probable that such a formal process would be taken by an individual.

Summary

Generalizations about retention can be misleading because each institution is dynamically unique in terms of academic emphasis and institutional culture. Retention issues can be further complicated because of the necessity to understand the student population, their educational goals, and their specific circumstances. The framework presented here is useful from both an institutional and personal perspective. To both of these audiences, the total context variables are relatively stable over time. What changes is the weight an individual perceives for each one of them in decision making and what interventions a particular organization can effectively change relatively quickly to increase retention.

Notes

[1] The purpose of this consortium is two-fold: to make available a national retention database and to provide a forum for discussing retention-related issues. The consortium is currently represented by more than 400 colleges and universities from all 50 states, Washington, D.C., Puerto Rico, Virgin Islands, and Canada.

[2] "Path models" is a term used here to indicate models that can be graphically represented in a flowchart-like manner. The models chosen are for illustrative purposes and not because they are considered better or worse than others mentioned in this paper.

[3] "In-person" is used here to mean traditional, brick and mortar, place-based education. "Online learning" is used here to mean distance learning that is delivered using computer- or web-based systems. "Blended learning" is used here to mean a combination of in-person and online learning.

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