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STRATEGIC DISCUSSION FORUM PROGRAMME

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Discussion Document

Modelling throughput at Unisa: The key to the successful implementation of ODL.

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“Although no one theoretical model can hope to account for most (let alone all) of the variance in dropout rates either within or across institutions, we suggest how a variety of currently distinct approaches may be combined within the framework of a single design in order to treat several clusters of relevant variables simultaneously” (Spady 1970:64).

“A theory that could fully explain every aspect of the attrition process would contain so many constructs that it would become unwieldy if not unmanageable. Such situations call for the use of theoretical models, which are simplified versions of reality that strip away the minute details to concentrate on factors that are assumed or deduced to be important.

Models can be judged by their usefulness. A model of the attrition process should contain sufficient constructs to explain what is undoubtedly a complex process and yet sufficiently simple to be understandable and useable. It should be able to explain collected descriptive data, and it should provide a framework against which predictions can be hazarded and judgements made about potential interventions” (Kember 1989:279-280).

“The more thorough the understanding of the evidence, the more appropriate the response will be” (Johnson Jr 2000:167).

“...most institutions have not yet been able to translate what we know about student retention into forms of action that have led to substantial gains in student persistence and graduation. ... Leaving is not the mirror image of staying. Knowing why students leave does not tell us, at least not directly, why students persist” (Tinto 2006:5-6).

1. INTRODUCTION

The University of South Africa (Unisa) has as its vision “Towards *the* African university in the service of humanity.” With its almost 300 000 students, Unisa is one of the mega-universities in the world and the largest in Africa. As the only dedicated comprehensive distance education provider in South Africa, Unisa faces unique opportunities and challenges with regard to contributing to realising the dreams and aspirations of a post-apartheid democracy in a developmental state, providing responsible open access to previously disadvantaged individuals and groups in redressing the injustices and inequities of the past and providing sustainable and appropriate student support optimising students’ chances of success.

National and international literature increasingly expresses concerns regarding the seeming “revolving doors” of higher education and a disquiet regarding the mixture (quality and quantity) of evidence suggesting reasons for the lack of student success and throughput. As these concerns increase, the need for correct and appropriate information has increased substantially. As one of the largest distance education institutions in the world, it is crucial for Unisa to develop a rigorous conceptual understanding of factors influencing student success and throughput, as well as develop an agile and supported tracking system to provide data for analysis and appropriate actions. The agile character of the conceptual model as well as the tracking system is necessitated by an abundance of literature which interrupts linear/causal understandings of student success and throughput. International research provides an uncertain picture of the myriad factors influencing student throughput in which the factors are contextual, dynamic, interdependent and *often* non-academic.

There is also evidence that tracking systems are often based on untested assumptions, anecdotal evidence, institutional and educational myths and beliefs as well as institutional and national politics. Once in place, institutionalised and tracked, these beliefs and practices are perpetuated. Tracking systems further serve a number of purposes. Effective tracking systems are crucial for the increasing maze of institutional audits and accreditation processes. Tracking systems, well-developed and agile, can also provide strategic information for *all* the stakeholders involved in higher education: from the management of the institution, the lecturers, the administrators and support personnel and (increasingly) to students themselves. Sadly, international literature and institutional practices provide ample evidence that these systems often end in providing data with no clear and functional support and follow-up structures, resources and strategies in place. The data harvested from these tracking systems never becomes actionable intelligence. It is therefore crucial to map the processes *following* and *sustaining* the tracking model. Data needs not only to be responsibly harvested and analysed, but also *caringly* used (and sustained). Only then can a conceptual model and tracking system fulfil its mandate.

The specificities of distance education, in an African context, coupled with the past and current life circumstances of its students, make the development of a conceptual model considerably more daunting. Such a conceptual model has to develop from a critical understanding of the history of higher education and specifically the effects and legacy of apartheid on past and future generations of students and educators. It is impossible to understate the impact apartheid as a legislative, educational and epistemological framework had on education and higher education in particular. A conceptual model which is developed within such a critical socio-historical sense of location is, however, only the start of the process.

Most of the current conceptual models are developed from *residential* North American and European higher education settings. Although there are some research efforts and proposals specifically dedicated to understanding student retention and throughput in the context of distance education, there is very little research and conceptual exploration regarding the impact of the specific *African* context on understanding student throughput and retention in an open and distance learning environment. International research from social-critical, anthropological and cultural theoretical frameworks do provide useful pointers to understanding throughput of students from other (non-Western, non-white¹) groups who form *minorities* in many higher educational institutions in the North Americas and Western Europe. Some of the socio-economic and racial characteristics may be similar, but the notion (and impact) of minority/majority plays itself out differently in the South African educational context. Although the majority of students in the South African context share many of the characteristics of the minority students in the North American and European contexts, the discourses and epistemologies in higher education are still (like their North American and European counterparts) Western and white.

The Unisa Through-put Forum during 2008 tasked Prof George Subotzky (Executive Director: Information and Strategic Analysis) and Prof Chris Swanepoel (Department of Decision Sciences) to form a smaller task team or working group to develop a rigorous conceptual model regarding factors impacting on student throughput at Unisa. This envisaged conceptual model will inform the development of a tracking system which will allow Unisa to fulfil its 2015 objective of providing effective and appropriate student support.

The introduction to *Improving throughput at Unisa: A report on three cohort case studies*² (hereafter referred to as ITU 2008a) contextualises the national and institutional concerns regarding throughput as follows (ITU Unisa 2008a:4):

Pursuing more equitable and efficient access, success and throughput has been a prominent goal in South African higher education over the past decades. This imperative prompted the emergence of the various academic and support and development initiatives which emerged in the 1980s. Given the deeply entrenched inefficiencies and inequalities of the apartheid higher education system, these goals were subsequently foregrounded in all policy documents and processes in the new democracy.

The introduction (ITU Unisa 2008a:4-5) problematises student throughput in the specific context of Unisa as a dedicated, comprehensive open and distance learning (ODL) institution. The document states that “[t]he specificities of distance education, coupled with the past and current life circumstances of its students, make the task considerably more daunting” (ITU Unisa 2008a:4).

The concerns expressed in the ITU (Unisa 2008a) and other institutional responses, such as strategic and operational plans, should also be understood against the history of higher education and specifically the effects and legacy of apartheid on past and future generations of students and educators. It falls outside the parameters of this working document to explore the specific impacts apartheid as a comprehensive framework had on higher education and Unisa in particular. Having recognised our specific context, the current concerns about student throughput should also be understood against national and international concerns regarding student throughput. Unisa is not

¹ The use of these terms “non-Western, non-white” is extremely contentious, but in the context of the research literature on the nature of persistence in North American and European contexts, these two terms do provide a critical (and contestable) point of reference.

² Addendum to the Self-evaluation Portfolio prepared for the Institutional Audit of the Higher Education Quality Committee, August 2008.

unique in this regard – neither as an institution of higher learning nor as a distance education institution.³

The **aim of this document** is firstly to provide a broad overview of theoretical developments and research findings within the broad scope of student retention and throughput. From this overview we will develop some pointers which seem significant for the development of a conceptual model for Unisa as an ODL institution in a specific African context. We will then continue to present a draft conceptual model that would serve as the first attempt in a continuing iterative process of refining the list of variables, their weighting as well as their interrelationships.

The **purpose of this document** is to serve as evidence of the thought processes of the small team under the leadership of Prof George Subotzky which has, since mid-2008, engaged with the research and the development of the draft conceptual model. This draft document will be circulated to different stakeholders and feedback invited. While the content of this document is disseminated, the process for developing a tracking and support system will continue.

The **document unfolds** and starts by providing a specific agile heuristic framework that served as the foundation in the development of this draft conceptual model, and locates the need for the contextual model in various Unisa plans and service charters, starting with the 2015 Strategic Plan (Unisa 2007a; hereafter referred to as SP), the Unisa Institutional Operational Plan 2008-2010 (Unisa 2008b; hereafter referred to as IOP) and the Unisa Service Charter (Unisa 2007b; hereafter referred to as SC). We will then explore some theoretical developments and research findings regarding student retention and throughput in two different layers, namely higher education in general, and then distance education in particular. From these theoretical developments and research findings we will harvest some critical pointers for the development of Unisa's conceptual model. Taking these pointers into consideration, this draft document will propose a pilot conceptual model. We will conclude with an overview of some steps that will result in the conceptual model being accepted and the tracking system implemented.

³ See the literature review.

2. TOWARDS AN AGILE HEURISTIC FRAMEWORK

McDaniel, McCully and Childs (2007:215) describe the impact of the increase of ubiquitous information and communication technologies on present-day organisations:

Decision cycles are compressed because of nearly synchronous communication and accelerating expectations for engagement. The behaviour of customers and competitors is no longer predictable. Annual strategic planning cycles are being overtaken by demands for greater responsiveness that can only be achieved through increased organisational ability to gather information from the environment and to respond effectively and quickly. Rapid prototyping and speed to market are essential. Successful organisations need to leverage information and information technology for strategic advantage to survive, be sustainable in, and help influence the unpredictable world. They need to develop new capabilities for global connectivity, real-time collaboration, rapid and continuous information sharing that facilitate shared situational awareness, boundary-less interaction and leadership opportunities, ubiquitous access and transformation of organisations to the Information age.

These authors continue to describe “net-centricity” as the key driver of organisational learning and growth. They refer to the work of Grimes (in McDaniel et al 2007:215) as having described net-centricity “as people, processes, and technology working together to enable timely access to information, sharing of information, and collaboration among those who need it the most”. The desired outcomes of net-centric communication are “decision-making that is timely, informed, more robust and dispersed, and authority and responsibility dispersed across a flatter organisation” (McDaniel et al 2007:216). The authors contrast this “sense-and-respond” organisation with hierarchical organisations in “which change was predictable, efficiency was the priority, and planning could take place on long-term cycles, sense-and-respond organisations are designed to gather and act upon their dynamic and unpredictable environment” (McDaniel et al 2007:217). The four fundamental capacities that enable organisations to increase their agility are awareness, flexibility, adaptability and productivity. McDaniel et al (2007:217) describe these capacities as follows:

Awareness is proactive sensing and data gathering. Flexibility is the ability to respond appropriately to expected changes, while adaptability is the ability of the organisation to respond to unexpected changes by adding options. Productivity is the capacity to respond effectively and efficiently with substantial internal changes that require innovation, involve risk, and are potentially disruptive.

Paradigm Shift International (PSI) (1999), in a document entitled *Knowledge management, response ability, and the agile enterprise*, proposes a number of “RRS system principles” which it defines as reusable, reconfigurable and scalable. In a list of ten principles, it proposes deferred commitment meaning “relationships are transient when possible; fixed binding is postponed until immediately necessary”. These different relationships in such an agile organisation are also flexible and dynamic (PSI 1999:20). These system principles as proposed by PSI are founded some key understandings of knowledge and knowledge management. Inter alia, PSI (1999:21) claims that

- what is new and necessary to know changes quickly
- the value of what is already known changes quickly
- some of what is known is obsolete and toxic
- applying someone else’s knowledge often has no glory
- knowledge is often not in the heads of the people who need it

- knowledge is understanding and appreciation, not data and processing
- collaborative learning is best, but (usually) culturally unnatural
- knowledge is not naturally mobile within an organisation
- what to know and when to know it is a vital strategic issue.

Also exploring agility in knowledge management and organisational learning, Rawsthorne (2005:9) refers to the work of Fowler, who proposes that agile methods are “adaptive rather than predictive” and “are people-oriented rather than process-oriented”. Exploring recent software developments in conceptual modelling within the context of a broader understanding of postmodernity, Noble and Biddle (2006) highlight the fact that there is a conscious avoidance of providing a “grand theory”, a new meta-narrative or a unifying theme plan applicable to all contexts. The main emphasis of recent conceptual modelling is to give a particular and temporary gestalt to different concerns at a specific time in a specific context. This results in negotiated responses with a high level of context sensitivity. These authors contest the notion that the absence of a grand narrative or universal overarching theory results in the inability to make decisions and take actions. “Rather, in place of a single privileged master narrative, we must contend with many localised small narratives, and reconcile them in making a decision” (Noble & Biddle 2006). In their manifesto for agile software development they propose that effective 21st century software development is more about responding to change than following a plan.

Noble and Biddle continue to explore various aspects of recent developments in conceptual modelling and point out that conceptual modelling is an act of bricolage where a number of existing concepts and research findings are combined in a unique context-specific temporal response. Such a response is neither *a* nor *the* final answer but is regarded to be fulfilling a purpose, for now. The purpose of such an approach to conceptual modelling is to provide a particular response that will be useful and result in a better understanding of the different factors involved.

This notion of agile conceptual modelling as proposed by Noble and Biddle (2006) has a number of implications for our conceptual model:

- Unisa’s conceptual model will use and adapt pointers from research findings from different contexts and institutional backgrounds. The “glue” that will hold these pointers together is the institutional commitment to grow in our understanding regarding the complexities surrounding student throughput.
- There are different existing models (eg Tinto 1975) that have been validated and expanded upon (eg Terenzini & Pascarella 1980). Unisa’s proposed conceptual model will be a bricolage of these existing models and attempt to develop a *particular* conceptual understanding within the specific context of Unisa as an ODL institution.
- The proposed model will encompass a commitment to be developed further and even changed as we grow in our understanding.
- Although Unisa’s conceptual model will be the basis for the development and implementation of a risk assessment and tracking system, it should be adaptable and allow for dynamic changes as the context and our understanding of the context changes.

Patton states (2008:4) that too many reports “gather dust on bookshelves, unread and unused”. Many data gathering strategies focus on the “What?” and the “So what?” and often leave the “Now what?” to unfold by itself. In most cases, according to Patton (2008:5), this does not happen. While getting more and regarding new information is part of the learning society, Patton expresses concern that “a central problem, often *the* central problem, is getting people to apply what is already known” (Patton 2008:7; italics in the original).

The above pointers from the context of the agile enterprise will function as a heuristic framework within which a conceptual model will be developed. The conceptual model will be a particular

understanding within a specific institutional context. The model will neither be a grand theory nor function as a meta-narrative regarding student throughput. The model should ensure that it includes reiterative processes of evaluation, adaptation and change. Though dynamic and agile, the model will allow Unisa to assess and predict failure and risk as we grow in our understanding of the complexities of the interrelations in the nexus where students, higher education and knowledge production meet.

We will now continue to explore the broader institutional context against which this development of a conceptual model should be understood.

3. BROADER INSTITUTIONAL CONTEXT AND BACKGROUND

THE 2015 STRATEGIC PLAN

The SP, in strategic objective 5, specifically refers to the “establishment of service-orientated, technology-enhanced learner support to increase retention and throughput” (SP Unisa 2007a:18). The SP not only envisions addressing throughput as an academic and student support issue, but also embeds student throughput in the broader context of rationalisation (SP Unisa 2007a:11):

The university must of necessity rationalise, reengineer, and reposition programmes which are no longer financially viable. In 2005 there were 2046 courses with fewer than 20 enrolments per annum. While pursuing its indicated growth targets, the University must focus its energies and resources on the improvement of quality, service delivery and improved throughputs. Special attention must be given to low-enrolment programmes of strategic value.

The SP (Unisa 2007a:12) also hints at the financial implications of addressing student throughput by stating that the “new funding framework seeks to improve the overall efficiency of the higher education system by rewarding student success and throughput”.

Under strategic objective 3, *Promote research, increased capacity and productivity aligned with national priorities for knowledge development*, the SP (Unisa 2007a:16) states as follows: “Use research earnings from subsidized publications and throughput of Masters and Doctoral students exclusively for research growth.”

The SP (Unisa 2007a:18) specifically commits Unisa to “establish service-orientated, technology-enhanced learner support to increase retention and throughput”. It describes this objective as follows:

Students need to be involved with learning experiences in a variety of environments and media in discovering, contributing to, recognising and interpreting discourses in a discipline. They do so in interaction with lecturers, tutors, other students, their communities, and workplaces. While they do so, they reflect on what they are learning. In line with our vision we aim to foster and produce the best in us to serve the highest human ideals culturally, intellectually and emotionally.

It is important to note that this objective specifically acknowledges the importance of considering “the whole student in his or her context when we develop the curriculum. We should imagine students as ethical beings, learners, workers, individuals, members of various communities, family members, sociocultural beings, and citizens as we devise curricula” (SP Unisa 2007s:18). This implies that we must “also support students through counselling and career management services and study skills development. Academic and support departments need to develop a deep understanding of how people learn - focusing on adult learning preferences in particular. How people learn, different learning styles and when and where people learn, impact on how we mediate learning” (SP Unisa 2007a:18). This objective then commits Unisa to “give attention to all of these in order to create a flexible and supportive environment, to foster student access and success” (SP Unisa 2007a:18).

The SP (Unisa 2007a:18) identifies specific strategies in obtaining this objective, inter alia, as follows:

- Establish the systematic collection and interpretation of data on and from students with the view to continuously improving the quality of study material, teaching, student support, physical facilities and service delivery.
- Continue with special interventions for those students trapped in perpetual failure cycles, especially those in identified high-risk modules/majors/programmes (notably those in Accounting and Applied Accounting Sciences, Mathematics amongst others).
- Enhance the support and guidance offered to post-graduate students through the establishment of a Centre for Graduate Studies at the Unisa Sunnyside campus, and thereby improve throughput rates for postgraduate studies.

The SP (Unisa 2007a:19) sets specific targets for improving student throughput: “Throughput rates improved annually (5% target) to achieve 40% throughput by 2011”.

The focus of strategic objective 8 (SP Unisa 2007a:21) is to “[m]anage financial, human and infrastructural resources rationally to monitor expenditure, optimise value, manage risks and ensure financial sustainability”. Having a critical conceptual understanding of student throughput that dynamically results in a “systematic collection and interpretation of data” (as envisaged in strategic objective 3) will allow Unisa to effectively “[r]econfigure growth targets and areas of concentration to leverage more subsidy income from research driven postgraduate degrees, growth in higher funding groups (subsidy formula), increased throughput, enhanced student support and managed access” (as envisaged as a target under strategic objective 8; SP Unisa 2007a:27).

3.2 THE UNISA INSTITUTIONAL OPERATIONAL PLAN 2008-2010

The IOP (Unisa 2008a) reiterates Unisa’s intention to increase its student throughput: “The Ministerial enrolment and output targets, released during 2007, created the imperative for a Managed Open Admissions Programme (MOAP) and for greater efficiencies in success and throughput” (IOP 2008:4). Under point 5 (IOP Unisa 2008a:7) the IOP states under *Monitoring progress and evaluating outcomes and impact* that a key impact would be “[i]mproved student retention, success and throughput rates”. IOP objective 3 commits Unisa to “[a]lign a relevant formal and non-formal product range, delivery model and learner support framework with the institutional identity to ensure appropriate graduateness” (IOP Unisa 2008a:12). Action 8 of objective 3 states as follows: “Continuously monitor and evaluate the impact of the PQM, inter alia, by means of an effective student tracking system” (IOP Unisa 2008a:14). The performance measure for this action is described as having “[i]mpact indicators of employer and student satisfaction, retention, success, throughput and graduateness” (IOP Unisa 2008a:14). The target dates for achieving objective 3 are as follows (IOP Unisa 2008a:14):

2008	2009	2010
Set of indicators developed as part of the monitoring and evaluation framework by August	Monitoring and evaluation and relevant institutional research undertaken by October	Improvement in impact indicators by September

The final accountability for achieving this objective lies with the Pro-Vice-Chancellor. It is the specific responsibility of the Vice-Principal (VP): Academic and Research, and the VP: Learner Support and Student Affairs and the Registrar are seen to be *co*-responsible.

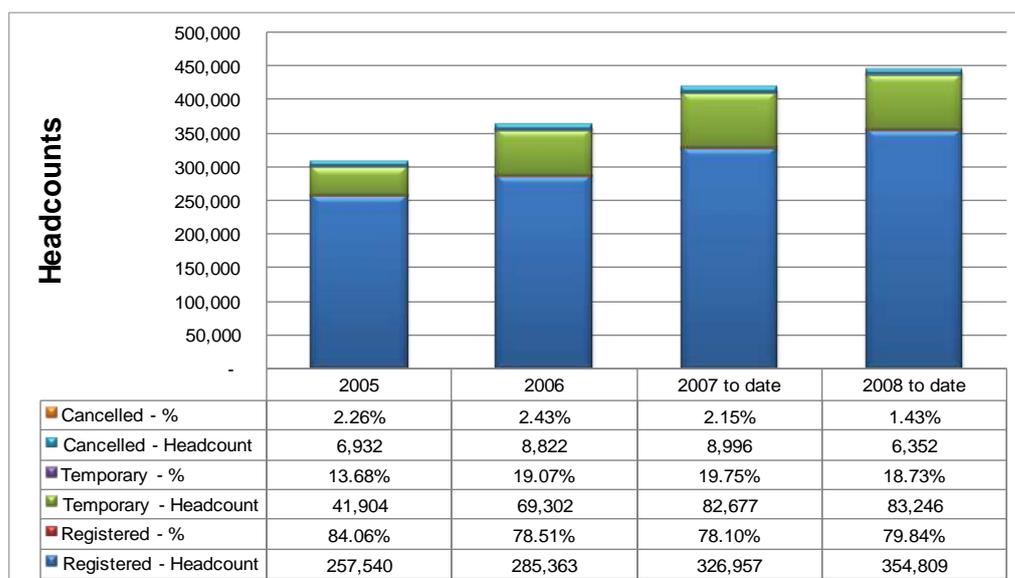
3.3 THE UNISA SERVICE CHARTER

Interestingly, student throughput and success are not mentioned at all in the SC (Unisa 2007b). This does not imply that increasing student throughput and success is not at the core of its embedded principles. The key features of the SP and IOP as explored so far bear witness to the fact that NOT having a clear and critical conceptual understanding of throughput and an effective and agile tracking and support system will render Unisa unable to honour its service charter effectively.

3.4 BACKGROUND AND SOME POINTERS HARVESTED FROM DISA DOCUMENTS AND PRESENTATIONS

At an update briefing at the Unisa Extended Management Committee (hereafter referred to as EXM) on 5 August, Prof Subotzky shared the following statistics regarding the total formal and non-formal headcounts including cancellations and temporary registrations 2005-2008 to date (table 1):

Figure 1: Total formal and non-formal headcounts including cancellations and temporary registrations 2005 – 2008 to date



The report *Improving Throughput at Unisa* (hereafter referred to as ITU, Unisa 2008a) sets out its purpose as to provide a first in-depth glimpse of patterns of factors impacting on throughput. “In particular, a major focus of this study was to grapple with the complexities of the measurement, benchmarking and targeting of throughput in the distance education context. This ground work, and the critical feedback which will be received in response to it, will serve to lay a firm foundation for the longer term study” (ITU Unisa 2008a:5). Though the document acknowledges that “[c]ohort studies provide the most reliable method of measuring throughput [and that tracking cohorts] allows the detailed monitoring and analysis of the various possible trajectories of students' progress through their studies”, there are a number of factors influencing this cohort study, inter alia limitations of using the proxy measure of throughput, the cohort method, benchmarking graduation rates and throughput target (ITU Unisa 2008a:6-21).

The ITU (Unisa 2008a:22-61) continues to present data and an analysis of three cohort studies:

- a) General First Bachelor’s Degree (minimum duration of 3 years): **BCom**
- b) Professional First Bachelor’s Degree (minimum duration of 3 years): **BCompt**
- c) Professional First Bachelor’s Degree (minimum duration of 4 years or longer): **LLB**

With regard to its data gathering, the ITU (Unisa 2008a:22) reports that cohorts “of first-time entering students for particular qualifications were identified and tracked to determine which of the possible outcomes occurred, namely, whether students:

- Graduated
- Dropped out
- Were still in the process of studying
- Had interrupted their studies (stopouts)”.

The study tracks cohorts in each of these categories from 1998 on and includes information up to 2007. Each year between 1998 and 2007 is called the censoring year. For each of these years, the number of graduates, dropouts, stopouts and current students in every cohort from 1998 on was counted.

Without discussing the ITU in detail⁴, we will explore its conclusion (ITU Unisa 2008a:48), which are as follows:

This poor showing [Unisa's graduation rate remains far below even the modest working benchmark] is principally the outcome of inordinately high levels of dropout across all the qualifications investigated... Measured against the key benchmark of the expected minimum time, it was found that considerable proportions of completing students did so within this period – which is defined in terms of course load. This finding suggests that the key challenge is to reduce dropout, and is not related primarily to time-to-completion. Another key finding is that a significant proportion of entering students stop out of their studies up to three times or more. This is tremendously disruptive of students’ success, progression and throughput. Further, it was found that the majority of dropouts and stopouts occur within the first year of study. This

⁴ The ITU (2008) is a comprehensive and thought-provoking study, the first at Unisa, and the document is seminal in contributing to developing a conceptual framework for understanding and predicting student throughput.

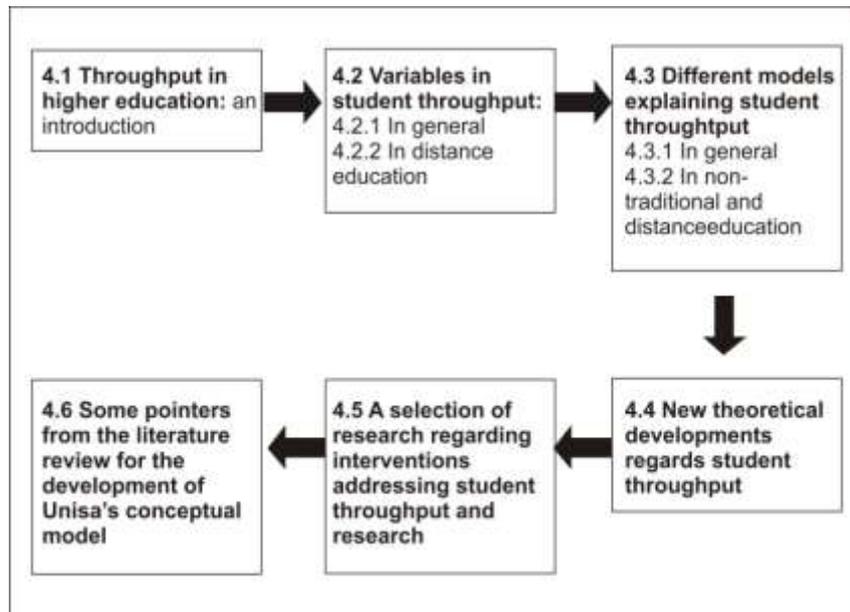
information, and the detailed nuanced variations between these three qualifications, will allow the design of interventions to be better informed and, in turn, more effective.

4. LITERATURE REVIEW

This literature review will attempt to provide a concise but informative overview of the literature regarding throughput and student success. We will start by exploring the general discourse surrounding student retention in higher education and then more specifically the discourse in distance education (4.1). We will then continue to share general findings regarding a range of variables impacting on student throughput (4.2) in two different foci – research findings that focus on *residential* institutions (4.2.1) and research findings that have been established in *distance education* settings (4.2.2) (internationally as well as nationally).

After discussing the findings of the different variables impacting on student throughput, we will explore different models trying to explain and research student throughput (4.3). We will do so with regard to two foci, namely *general* models (4.3.1) and models specifically developed in/for distance education environments (4.3.2). This literature review will then provide a selection of research findings on the success of interventions to address student throughput (4.4). Before we complete the literature review by harvesting some pointers from the literature for the development of Unisa's conceptual model (4.6), we will briefly discuss some new theoretical developments regarding student throughput (4.5). The following diagram (figure 1) gives a graphic presentation of the sequence in this literature review.

Figure 1: Overview of the structure in this literature review



Overview of the structure in this literature review

4.1 THROUGHPUT IN HIGHER EDUCATION: AN INTRODUCTION

Concerns about graduate throughput are endemic to international higher education. In the South African higher education context, the National Plan for Higher Education in 2001 established benchmarks for graduation or throughput rates. These were superseded in March 2007 by enrolment and output targets for all higher education to be attained by 2010 (Visser & Subotzky 2007:3).

The number of international reports on and investigations into student attrition has increased over the last few years. International examples include

- *Retention and wastage in further education and higher education* (Hall 2001)
- *Student retention, support and widening participation in the north east of England* (Dodgson & Bolam 2002)
- *A study of non-completion in undergraduate university courses* (Morgan, Flanagan & Kellaghan 2001)
- *Factors affecting successful student completion in a career oriented program* (an Australian study) (Stewart 2004)
- *Student expectations and university interventions – a timeline to aid undergraduate student retention* (a Welsh study) (Fitzgibbon & Prior 2003)

In the study by Hall (2001) published by the Scottish Council for Research in Higher Education he found that

- retention rates differ by sector of education, age of students, level of course, subject of course, socio-economic group and institution
- data on student retention is often of poor quality and may be inaccurate or misleading
- reasons for student dropout operate at individual-student, institutional and supra-institutional levels.

Hall's report (2001:iv) further warns that "widening access is likely to result in increasing levels of student drop-out".

More specifically in higher education, the report found that reasons for leaving higher education are usually complex and multiple. There is evidence that retention rates and reasons for leaving differ according to the subject studied. This may be because of the demands of different programmes but could also be influenced by the style of teaching required in, or the demands made by, certain subject areas. There is furthermore evidence to suggest that a range of factors can influence student retention in higher education. Some operate at the level of the individual student (motivation and ability and other personal characteristics and circumstances), others at institutional level (quality of advice, guidance and general quality of provision), and yet others operate at supra-institutional level (finance and other socio-economic factors). The evidence suggests that these factors operate differently for students of different ages, and that different factors influence early leavers and later leavers. Younger students are more likely to have made a poor choice of course and to cite programme difficulty, while mature students are more likely to leave because of external circumstances. Early departure may be more strongly influenced by social integration, while later departure may be more concerned with course style and content and the ability of the student to cope with it. While the evidence is not conclusive, there is a strong suggestion that counselling, or other specific forms of intervention, can help students who are at risk of withdrawing from their course to stay and complete it successfully (Hall 2001:36).

Research on student failure and persistence spans many decades. “It is one of the most widely studied issues in higher education over the past twenty-five years” (Tinto 2002:2). Although this research resulted in “an ever more sophisticated understanding of the complex web of events that shape student leaving and persistence” (Tinto 2006:1), “most institutions have not yet been able to translate what we know about student retention into forms of action that have led to substantial gains in student persistence and graduation” (Tinto 2006:5).

There has also been a growing understanding that different institutional settings (eg residential and non-residential) and the dynamic relations between student learning, institutional context and social, economic and political contexts impact on research and its findings (Tinto 2006:4). Woodley (2004) has sounded a warning that there is furthermore a danger of pathologising student dropout in specifically distance education. He suggests that student dropout in distance education is “under-conceptualised and under-theorised” and petitions for a more critical understanding of the impact of the unique nature of distance education on students leaving (Woodley 2004:49). He warns that in a modular, flexible approach as is followed by the Open University (OU) of the United Kingdom (Woodley 2004:55)

- Students no longer register for a particular qualification or programme, so anything like a graduation rate is impossible to calculate
- Dropout has to be extended to consider those students who finish one course or module but who do not continue to study immediately
- Students can leave with interim qualifications such as certificates, diplomas or just course credits and be “successful” in their own terms
- Students can transfer to other institutions to complete their learning
- Students can take as many years off as they like

Against this general backdrop, let us turn our attention to the different variables that play a role in student throughput.

4.2 VARIABLES IN STUDENT THROUGHPUT

For the purpose of this draft document, the international discourses on student risk, retention, attrition and throughput are found in three overlapping domains, namely in higher education, in distance education and in adult learning theories.

The following list provides examples of the different and variety of variables that have been explored and reported on in international, national and institutional (Unisa) contexts. The list, although fairly comprehensive, is by no means representative of *neither* all research *nor* all variables. The following are examples of variables that have been researched:

- Demographic factors such as age, gender and race (eg Gorinski & Abernethy 2003; Taplin & Jegede 2001)
- Different models of student learning (eg Biggs 1989; Ramsden 1985, 1992)
- Self-authorship or autopoiesis (eg Maturana & Varela 1980; Baxter Magolda 2001; Pizzolato 2003, 2004, 2005)
- Students’ ways of knowing and ways of learning (eg Bernal 2001)
- The impact of the curriculum in the context of Accounting education (eg Du Plessis, Prinsloo & Müller 2005; Müller, Du Plessis & Prinsloo 2007)
- Lecturer and student perceptions regarding success and failure (eg Killen, Marais & Loedolff 2003; Kreber 2003; Taylor & Bedford 2004)

- The role of motivation, attribution and stress in student success (eg Brown 1988; Haggis & Pouget 2002; Robotham & Julian 2006; Yorke 2004)
- Poor academic results prior to entering the university (eg Eiselen & Geyser 2003; Anderson, Benjamin & Fuss 1994)
- Student perceptions regarding the module/course/success (eg Killen, Marais, & Loedolff 2003; Sadler & Erasmus 2005; Shanahan & Meyer 2001)
- Personality types (eg Borg & Shapiro 1996)
- Matriculation exemption and the level of engagement by students and number of assignments submitted and passed (eg Parker 2006; Pretorius, Prinsloo & Uys 2008)
- Confidence and over-confidence (eg Grimes 2002)
- Financial and family problems (eg Brawer 1996; Dale & Zych 1996; Johnson 1996)
- Not having clear career goals (eg Dale & Zych 1996; Johnson 1996)
- Reading skills and prior experience in Mathematics (eg Bohlmann & Pretorius 2002; Pretorius & Bohlmann 2003)
- Poor social integration (eg Tinto 1975; Johnson 1996)
- The impact of students' locus of control or autopoiesis (eg Pizzolato 2003, 2004, 2005)
- The tensions that arise between differences between the lifeworlds of students, higher educations as systems and the discipline-specific discourses (eg Aikenhead 1996; Luckett 1999)
- Different poverties using the work of Max-Neef as heuristic (Schenck 2008)

Exploring the vastness of research into student retention and success in higher education, it seems important to remember Tinto's warning (2002:3) that research findings are context-specific and that what works in one context, for example the United States, will not necessarily work in another.

Many of the research studies on throughput and retention have been done from the institutional perspective focusing on student retention and throughput from the view of institutional managers, regulatory bodies and government (Yorke 2004:19). Martinez (2001:1) classifies research on retention and achievement as either investigating factors influencing dropout or failure and research that identifies possible solutions. A vast array of authors has also explored either variables influencing student success and failure or *perceptions* regarding the impact of these variables. Examples of these different research initiatives are research on the conditions of student success (eg Tinto 2002), staff perceptions regarding student failure (eg Taylor & Bedford 2004) and student perceptions regarding their success and failures (eg Kreber 2003). Similar research has been conducted in the South African context by Killen et al (2003) and Sadler and Erasmus (2005).

Before we continue to explore different *models* explaining student throughput, we will now briefly explore four specific sources exploring different variables to get a sense of the complexities awaiting the formulation of a conceptual model. We will look at the following five studies:

- In the context of Canada and the USA: *Access, persistence, and barriers in postsecondary education: a literature review and outline of future research* (EPI 2008) (4.2.1)
- A South African case study: *Rural Education Access Programme* (REAP 2008) (4.2.2)
- A South African study: *Postgraduate student retention and success: a South African case study* (Koen 2008) (4.2.3)
- A South African study: *Factors distinguishing between achievers and at risk students: a qualitative and quantitative synthesis* (Eiselen & Geyser 2003) (4.2.4)
- *A case of improving teaching and learning in South African Higher Education* (Scott, Yeld & Hendry 2007) (4.2.5)

4.2.1 ACCESS, PERSISTENCE, AND BARRIERS IN POSTSECONDARY EDUCATION: A LITERATURE REVIEW AND OUTLINE OF FUTURE RESEARCH (EPI 2008)

We start with an international publication published by the Educational Policy Institute (EPI) regarding student access, persistence and barriers within the specific contexts of Canada and the USA (EPI 2008). This document provides a rich literature review regarding student retention and throughput. It explores the following factors as possible variables in understanding student success:

- gender
- disability
- parental education and “first-generation” students
- race, ethnicity and immigrant status
- language
- aboriginal status
- family type
- family or parental income
- rural/northern people: distance to postsecondary institutions
- conceptualising the barriers to access
- information/knowledge/motivation
- academic preparation
- finances

These factors, taken together, provide a better understanding of the under-representation of some groups in postsecondary education (EPI 2008:4).

With regard to **gender**, the EPI (2008:4) found that research into postsecondary participation “has shown an increase in the proportion of women students overall”. EPI further found that there are also gender differences “in participation among types of institutional programming: women are still over-represented in social sciences while men are over-represented in science and engineering. This is in part reflected in employment and income outcomes: in many cases, women still earn less than men” (Andres & Adamuti-Trache 2007 in EPI 2008:4).

Disability as a factor impacting on student throughput and success (EPI 2008:5) shows that disabled students are over-represented in colleges and under-represented at universities. EPI quotes Butlin’s research (1999 in EPI 2008:5) into the factors related to participation and concludes that “individuals with activity limitations were less likely to participate in university education, but that activity limitations had little impact on college or vocational/technical participation”.

EPI (2008:5) identifies **first-generation students** as “a student whose parents have not participated” in postsecondary school education (PSE). These students “tend to face greater challenges to participation than their peers with more educated parents. These challenges may be at least partly financial, but they are also non-financial in nature. American research shows that first generation students are more likely to be female, older, African-American or Hispanic, have dependent children, and come from lower-income families” (Engle et al 2006 in EPI 2008:5). EPI (2008:5-6), however, acknowledges that this phenomenon is more complex with several variables acting in different ways, depending on the context. EPI states that some researchers “argue that parental education – and particularly the father’s education – becomes even more important when it comes to university participation (Finnie, Usher, and Vossensteyn, 2004; Caponi and Plesca, 2007). Others have found

that the mother's education is positively associated with expectations for participation of girls but not for boys (Frenette and Zeman, 2007)" (EPI 2008:6)⁵.

The EPI findings also explore the representation and under-representation of some ethnic groups in American and Canadian contexts, and then continue to explore the impact of **race, ethnicities and gender** on student success (EPI 2008:6). For example, EPI reports that "researchers have found that black university applicants to Ontario universities have been disproportionately female, raising concern around the apparent absence of young black men in the system" (Junor & Usher 2004 in EPI 2008:6).

Much of the research around visible minorities in the United States comes to different conclusions than the Canadian research, reflecting – at least in part – the differences in the two countries' populations. However, research involving Latino participation in PSE reflects many of the same challenges facing under-represented people – such as Aboriginal people and particular visible minorities – in the Canadian system. Higher dropout rates, lack of preparedness for postsecondary study, importance of peer encouragement, the culture of "possibility" needed to support students' dreams for PSE, financial supports, and informational deficiencies are all identified as issues facing Latino people who are underrepresented in the American PSE system (Baumann et al 2007 in EPI 2008:6).

EPI research regarding the **impact of language** shows different concerns than the impact of language on student success in the South African context.

Some researchers have found that Anglophone youth are more focused on completing higher education than Francophone youth – in both Quebec and in the rest of Canada (Looker and Thiessen, 2004). But the complex nature of language and culture are reflected in the conclusion that Francophones outside of Quebec have higher educational aspirations, although they are still lower than those of Anglophones (Looker and Thiessen, 2004 in EPI 2008:7).

Aboriginal peoples are also underrepresented in PSE in Canada and the USA. And when they *are* represented they "are more likely to be older, married, and have children than the 'typical' student – partly reflecting their greater likelihood of delaying entry into PSE after high school" (EPI 2008:7).

Barriers to PSE participation may be both financial and non-financial for Aboriginal people. Non-financial barriers include personal factors such as a lack of self-confidence and motivation, lower high school grades, lower levels of parental education and parental expectations; institutional factors such as a lack of understanding of Aboriginal culture on campuses and the experience of racism on campus; all compounded by the history of forced assimilation through non-Aboriginal educational institutions ... In addition, Aboriginal people are more likely than non-Aboriginals to live in rural or Northern areas, meaning they incur greater costs associated with postsecondary participation.

⁵ These findings reported on by the EPI (2008) seem to confirm Aikenhead's research (1996) regarding the impact of students' lifeworlds prior to their entering higher education and the different discourses in science education. Aikenhead's proposal "offers an account of students' lived experiences in a science classroom by considering those experiences in terms of students crossing cultural borders, from the subcultures of their peers and family into the subcultures of science and school science" (Aikenhead 1996:1).

Family type as used by the EPI categorises families as two-parent families, single parent families and parents attending PSE. “Students from two parent families are more likely to go on to postsecondary study, although there has been an increase in the participation of students from single parent (particularly single mother) families” (EPI 2008:7). EPI (2008:8) continues to report:

Additionally, students with dependent children – particularly as single parents – are less likely to complete PSE than those without dependent children (Tomokowicz and Bushnik, 2003; Lambert et al, 2004). The additional challenges associated with supporting children – and often relocating to attend a postsecondary institution, moving away from support networks – can make it exceptionally difficult to complete a course of study (Holmes, 2005; Lambert et al, 2004)⁶.

With regard to **parental or family income**, EPI reports firstly that “individuals from the highest income families are much more likely to go on to university” (EPI 2008:8). EPI continues to report that although parental or family income does play a role, there is no consensus on the “weighting” this factor acquires in relation to other factors, such as parental education (EPI 2008:8).

The **distance from PSE** facilities plays an important role in students’ success or failure. EPI (2008:8) states that “[d]istance to a PSE has been assessed as an important variable in determining who accesses PSE – particularly for people who cannot access PSE within commuting distance”. Distance as an indicator is, however, also a complex and layered notion. EPI (2008:9) quotes various studies that have found that it is not necessarily the distance as a particular variable, but rather that students who are far from PSE institutions are more likely to be from lower-income families and rural backgrounds. Distance from PSE institutions often represents

... labor market differences, community exposure, relocation fears, and community disconnect [which] link with structural barriers such as family background to impact PSE access. Community characteristics – such as the presence of role models, quality of high school education, and the type of employment available in the community – have all been found to impact access to PSE (EPI 2008:9).

The EPI document is a thorough and thought-provoking exploration of factors affecting access, retention and barriers in PSE. This study is, however, firstly focused on exploring the “who” – the composition of the participants in postsecondary study and their relationship with the overall population, and not necessarily on the “how many” in relation to the overall population (EPI 2008:1). This study does, however, provide some important pointers to Unisa’s growing understanding of their own “who”.

We now turn to a South African study specifically exploring factors impacting on the success of previously disadvantaged students.

4.2.2 RURAL EDUCATION ACCESS PROGRAMME (REAP 2008)

The second publication that adds to the above insights and findings is a recent **South African** study by the *Rural Education Access Programme* (REAP 2008) which explores two key questions:

⁶ Family types as an important factor in understanding student throughput and retention has not yet been addressed in any South African study or higher education risk assessment strategy.

1. What are the factors that facilitate (and inhibit) access to and completion of higher education studies by disadvantaged undergraduate students?
2. What recommendations can be made for improving access to and completion of such studies for these students?

REAP (2008:5-6)⁷ uses the following criteria or pointers to explore “disadvantaged”:

- **geography** (specifically, students from rural areas)
- **financial resources** (which often go hand-in-hand with geographic disadvantage)
- **schooling** (where students have often attended under-resourced, low performance schools)
- **language** (where the language of tuition in the higher education institution may be a second or even a third language for the student)
- **other socio-cultural factors** which may prevent students from being adequately prepared for, and able to participate effectively in, tertiary studies (REAP 2008:5-6).

REAP’s key findings (2008:6) indicate that

... students who receive sustained support on the REAP programme are more likely to complete their studies in a shorter time, that a rural background may have a negative influence on student success, and that inadequate financial resources are one of the most important reasons cited for students dropping out of university.

REAP also warns that although the unpreparedness of students is well documented, the unpreparedness of higher education institutions for these types of students is less taken into account (REAP 2008:6).

With regard to the factors that inhibit students’ chances for success, as explored by REAP (2008:8), these include the following:

A major factor in student dropout, cited by students of all race groups almost equally, is their poor academic and social preparation for tertiary education in school, and inadequate academic teaching and learning support in universities. Other major factors that disadvantaged students experience, that relate more to their background, are having to study in a second or third language, to which rural students in particular may have had little exposure, and being the first generation in their families, and perhaps even in their communities, to enter higher education. This means that students’ families do not have the educational capital or resources to assist their integration or support them in their academic studies.

Although students’ competency in the language of tuition does play a major role in the chances of being successful in higher education, REAP also points to the fact that students’ “conceptual

⁷ Though REAP explores a specific definition of “disadvantaged”, it may benefit Unisa to look at other interpretations. In her inaugural speech, Prof Rinie Schenck (Department of Social Work at Unisa) explored Max-Neef’s human scale of development with its categories of universal needs but culturally and context-specific satisfiers as a way to understanding our students’ lifeworlds. It may be an important epistemological move to explore students’ lifeworlds not through a lens of “disadvantaged” or “poverty”, but from an appreciative inquiry perspective investigating how “advantaged” our students are. This will still allow us to explore the “poverty” of students and many of our students’ disadvantaged status, but it will provide us with a broader taxonomy to grow our understanding.

confidence” in the language of tuition plays an underestimated role in several studies on language literacies (REAP 2008:8). “Students lack exposure to written and spoken English, which impacts on their language competence at university” and this is also seldom explored as a variable.

Resources such as books, magazines and newspapers are generally inaccessible to the families of these students. Similarly, many disadvantaged students do not have access to information technology such as computers and the internet; nor would they have televisions in their homes. These resources fulfil an important educational function in exposing young people to the outside world, as well as to different careers and the world of work (REAP 2008:8-9).

REAP (2008:9) assumes that academic achievement prior to entering higher education is not “the most reliable indicator of potential to success in higher education”⁸. As a consequence of this, “REAP has included broad criteria and indicators based on their experiences with students, including leadership abilities, behavioral and attitudinal qualities and, especially, internal drive and motivation. In addition, rather than selection being purely a paper exercise, as usually found in higher education institutions, REAP staff interview short-listed candidates which allows for a more in-depth profile to be obtained” (REAP 2008:9)⁹.

In exploring a tutorial programme aimed at assisting specifically at-risk students, REAP found that where “tutorials were supplementary and aimed at weaker students, they were sometimes perceived negatively, resulting in poor student attendance” (REAP 2008:11).

In general, REAP (2008:11) states as follows:

In order to be able to provide timely and appropriate academic support, institutions need to be able to identify at-risk students at an early stage, to track and monitor their progress, and to evaluate the effectiveness of support systems and programmes offered. This study found, however, that tracking and monitoring systems were generally poorly developed at all levels of academic and support provision across the institutions in the sample.

REAP (2008:11) then concludes that

[t]he data collected suggests, therefore, that it is not enough to simply have support systems in place and expect students to make use of them; rather, student support services need to take greater cognisance of diverse social and cultural issues in the types of support that they offer and that affect students’ use of these support services, and to provide these services in students’ home language, where feasible. They need to reflect an institutional culture that is inclusive of and accessible to the entire, diverse student population and marketing of these services needs to reach out to this diverse population, to increase their awareness and use of these facilities. This requires that institutions acknowledge disadvantaged students as a grouping distinct from their traditional white student intake, and identify their challenges and needs as they manifest in the particular higher education institution. Furthermore, integrating awareness of these services into the curriculum rather than viewing them as

⁸ A departure from weighting prior academic performance less in relation to other variables may require a change in institutional mindset and should dramatically impact on our risk assessment and tracking system.

⁹ We should not dismiss REAP’s interviews as key in assessing students’ risk profile. Although almost impossible at Unisa as an ODL institution with its large numbers of students, the registration form and processes and the first (activity or subsidy) assignment can be used more fully in order to get a clearer picture of students’ risk profiles.

“add-ons”, would also go a long way to de-stigmatising them and making them more familiar.

Our focus shifts now to another South African study specifically on *postgraduate* student retention.

4.2.3 POSTGRADUATE STUDENT RETENTION AND SUCCESS: A SOUTH AFRICAN CASE STUDY (KOEN 2008)

This recent South African publication by Koen (2008) explores student retention and success among postgraduate students at the University of the Western Cape (UWC). Koen laments that most of the institutional strategies addressing student throughput and success are not based on research findings but rather on often anecdotal evidence (Koen 2008:vii). According to Koen (2008:14), the dominant explanations regarding student dropout and failure have been given as six predictable “structural sociology” perspectives:

- rational-economic
- resource scarcity
- ineffective admissions policies
- schooling deficits
- inadequate adaptation
- inappropriate vocation choice¹⁰

Despite various research findings trying to explain student retention, the following questions remain unanswered (Koen 2008:17-18):

- Why do financially well-off students who performed well at school, whose school subjects and university courses are aligned, and who receive adequate financial support leave the university?
- Why do students with good marks leave institutions?
- Why do students who were attracted to an institution based on its reputation and the values it articulates end up leaving because an incompatibility developed between their expectations of the institutions and their experiences?
- What is the relationship, if any, between academic department and structural university characteristics like planning organisation, institutional rules, institutional socialisation, academic culture and student success and failure?
- What is the relationship between student aspirations, expectations, intentions, study plans and retention?

Koen (2008:23-33), in defining an analytical framework for his research, identifies seven collective variables:

- *institutional context* (social climate, physical setting, social and academic spheres)
- household spheres such as socio-economic group, educational past, domestic obligations, work responsibility and financial circumstance
- *personal factors* like ability, levels of psychological motivation and commitment (such as desire to finish) and qualities of students
- *organisational factors* such as appointment policies, financial allocations, departmental structures, intellectual environment, institutional resources and academic context relating to supervision and academic progress

¹⁰ For a full description of each of these perspectives, see Koen (2008).

- *socio-political influences* like allocation of state resources, and scholarships, laws and regulations pertaining to higher education
- *academic performance factors* like progress with a thesis, full-time versus part-time study, faculty affiliation
- *research factors* like teaching and supervision, problems inherent in research, language and the qualities of students

Koen (2008:33-34) continues to formulate a number of hypotheses as follows:

- a) Students who receive inadequate academic and institutional support, and who do not enjoy strong social interaction with academics and fellow students, are more likely to leave than are other students.
- b) Weak academic departments and faculties (in terms of the number of PhDs and the type of resources available for research training and socialisation) are more likely to struggle to retain students than are strong departments.
- c) The distribution and availability of organisational resources (like supervisors) will affect the morale of academics and students and their motivation and commitment to stay and succeed.
- d) Student socialisation experiences and the extent to which institutions apply rule-forming behaviour are likely to play a significant role in retention.
- e) Resources influence the level of student motivation and commitment to completing a master's course, the type of academic support they receive and the degree to which they are affirmed in departments.
- f) Socio-economic and household factors play a strong role in retention, and create pressures that force students away from master's study.
- g) Students' motivations, aspirations, expectations, intentions and study plans play crucial roles in retention.

Koen postulates that there is considerable support in international literature for Tinto's model, while acknowledging that the calls for the refinement and revision of his model seem to be equally valid. Koen (2008:69) refers specifically to the work by Longden, who questions the portability of Tinto's views to different contexts. He also refers to the work of Berger (2002), who doubts Tinto's model in the light of the fact that a specific group's understanding of retention and throughput is founded in that group's understanding of cultural capital. Tinto's model is also criticised by authors (in Koen 2008:69-70) such as Tierney (1992) and Braxton and Lien (2002), who propose that the Tinto model does not take seriously enough the notion of cognitive dissonance and even dislocation that students may experience when they enter higher education and encounter various forms of epistemological and ontological dissonances¹¹.

4.2.4 FACTORS DISTINGUISHING BETWEEN ACHIEVERS AND AT RISK STUDENTS: A QUALITATIVE AND QUANTITATIVE SYNTHESIS (EISELEN & GEYSER 2003)

In another **South African** study from a residential setting, Eiselen and Geyser (2003) explore the differences between what they call achievers and at-risk students. Differences between the two groups are explored from both a quantitative and a qualitative perspective, focusing on study habits, language proficiency, cognitive ability, academic background and perceptions of reasons for failure or success.

¹¹ See also Aikenhead (1995), Prinsloo (2008) as well as Prinsloo, Slade and Galpin (2007) on the (dis)location students experience in online learning.

From both perspectives, the study showed that the groups differ in terms of language proficiency and study habits with Achievers having better communication skills and being more diligent than At Risk Students. Vast differences in perceptions of reasons for success or failure were also identified. The study furthermore showed that Achievers on average have better cognitive abilities and obtained better school marks than At Risk Students (Eiselen & Geysler 2003:118).

Eiselen and Geysler (2003:128) found that with regard to study methods and time management, at-risk students “are more likely to procrastinate and to study in a less disciplined way”. With regard to prior learning histories, these authors also found that “At Risk Students on average obtained lower m-scores, passed fewer subjects in the first semester and are less intelligent than Achievers on most of the intelligence measures” (Eiselen & Geysler 2003:128). The language proficiency of these two groups, according to these authors, also differed dramatically. “At Risk Students have lower scores on Vocabulary than Achievers” and “At Risk Students find it more difficult to verbally express themselves than Achievers” (Eiselen & Geysler 2003:128).

Reporting on the findings of their qualitative research, Eiselen and Geysler (2003:128) say that at-risk students “feel more insecure, i.e., they have a greater need for personal attention, assistance and guidance”. These students “experience HE [higher education] more negatively than Achievers, i.e., they find it more difficult to integrate socially in the sense that they feel humiliated in class and experience high stress levels”. The at-risk students in this study were also more likely “to blame outside sources as reasons why they and other students like them are unsuccessful, e.g., parental interference” (Eiselen & Geysler 2003:128)¹².

In the next section we will explore different models aimed at explaining student throughput.

4.2.5 A CASE OF IMPROVING TEACHING AND LEARNING IN SOUTH AFRICAN HIGHER EDUCATION (SCOTT, YELD & HENDRY 2007)

This research focused on “one of the most difficult and urgent topics which concern higher education institutions, government and the general public: the outcomes of higher education” – that of missing student support (Scott et al 2007: iii). The authors define the purpose of their research as follows:

The main purpose of this research was to make a case for greater and different forms of support for the teaching and learning core function at public higher education institutions and to point to a number of possible interventions designed to improve the quality of the educational experience afforded to undergraduate students at higher education institutions, and therefore, the quality of higher education graduates (Scott et al 2007: iii).

Broadening access to higher education and the increase in student numbers have “not necessarily meant significant increase in the actual participation of African students in higher education” (Scott et al 2007: iv). Uncomfortable as it may be, Scott et al (2007: iv) find that student performance “continues to be racially differentiated.” These authors acknowledge that the issue around poor student throughput “is a complex and multilayered one” which is shaped by the following:

¹² Parker (2006), in another South African study, provides a thorough overview of research done primarily in the United States on factors impacting on student success in Introductory Microeconomics. Some of his findings concur with the findings of Eiselen and Geysler (2003).

- the lack of preparedness of students and staff;
- the nature and organisation of teaching and learning at higher education institutions;
- the conceptualisation of the educational process, particularly in terms of the appropriateness of content and assessment methods and its relationship to different institutional cultures;
- the extent or lack of professionalisation of academic staff;
- the nature and extent of funding; and
- the role that system differentiation might have in addressing under-preparedness (Scott et al 2007: iv).

Except for the acknowledgement that the poor state of student success is complex and multilayered, what is significant in the research by Scott et al (2007) is the fact that there are more reasons than just the under-preparedness of students. The reasons (as listed above by Scott et al) include the lack of preparedness of students but the next five issues listed by Scott et al (2007: iv) are factors outside of the students' loci of control. This research also indicates that some of the factors impacting on student success are *also* outside the loci of control of higher education institutions (Scott et al 2007: vii). For example, many lecturers in higher education expect an improved schooling system to be the key to improving rates of success in higher education (see for example Killen et al 2003), but Scott et al (2007: vii) state clearly that "improvement in schooling should not be relied on in itself as the primary means of achieving substantial improvement in graduate output and equity of outcomes in higher education." Scott et al (2007: viii) argue, "...systemic responses are essential for improving the educational outcomes of the sector". These authors propose a number of strategies:

- the reform of core curriculum frameworks;
- building educational expertise in the sector to enable the development and implementation of teaching approaches that will be effective in catering for student diversity; and
- clarifying and strengthening accountability for educational outcomes (Scott et al 2007: viii).

Higher education in the South African context has specific characteristics that result from our situatedness¹³. Higher education in South Africa is "primarily an undergraduate teaching system" and the production of graduates is "*exclusively* the responsibility of the higher education sector" (Scott et al 2007:5; italics added). The "production of good graduates (at all levels) is at the core of the higher education sector's 'core business'" (Scott et al 2007:6).

Without discussing Scott et al (2007) in detail, we provide an overview of the key moments or pointers in their research.

- *With regard to the participation rates:* "...while there is a body of opinion in the academic community that a significant proportion of the intake are not fit to be in higher education, the low participation rates make it clear that, in the interests of development, the sector must be able to accommodate at least the students who are currently gaining access" (Scott et al 2007:11).
- In a significant finding of the 2000 cohort study, 59% of pre-merger Unisa's cohort left without graduating, while 85% of per-merger Technikon RSA's cohort left without graduating (Scott et al 2007:12).
- Scott et al (2007:19) argue that graduate throughput is of national concern on the grounds of the "shortage of high-level skills reported in a number of areas of the economy and the society at large (together with the existence of some graduate unemployment) indicates

¹³ Later in the document, when we propose certain key constructs as foundational to the conceptual model, we will return to this notion of "situatedness" of higher education in general, and Unisa in particular.

that the output of the higher education sector is not matching the country's developmental needs"; "[t]he persistent disparities in participation rates are not justifiable against the need for redress and social inclusion"; "the graduate output of the higher education sector is not meeting national needs in respect of the two key areas of 'economic growth and ...social cohesion'."

- In discussing the implications for the performance patterns for improving graduate output, Scott et al (2007:21-22) point out that "increasing the intake is not in itself an efficient means of increasing graduate output. Given the small pool of adequately-prepared candidates, increasing the intake will result in increasing the proportion of less-prepared students in the sector"; "improving graduate output depends primarily on improving the performance patterns"; and since "the majority of students entering the sector are not completing their studies, it can reasonably be inferred that the existing system is not effective in contemporary conditions."
- Scott et al (2007:23-29) point to several indicators for systemic change which include the need for more effective articulation between the secondary schooling system and tertiary education as well as the fact that "the greatest attrition occurs at the end of the first year of study" (Scott et al 2007:28).
- A major issue in this study by Scott et al (2007) is the question on the scope and locus of responsibility of the higher education sector to address the poor student outcomes. Scott et al (2007:31-40) differentiate between factors beyond and within higher education's control. As we will return to the issue of locus and scope of control and responsibility in the discussion of the key constructs informing Unisa's conceptual model, it is worthwhile to take note of the pointers in Scott et al (2007).
- Factors *beyond* higher education's control include the outputs and prospects of the school sector and the notion of academic preparedness and literacy of students when enrolling in higher education. Scott et al (2007:36) firstly refer the notion of academic literacy and quote the descriptors of the competencies expected from students when enrolling in higher education from a study by Cliff, Hanslo and Visser (2003 in Scott et al, 2007):
 - make meaning from what they read;
 - understand and interpret conceptual and metaphorical language;
 - identify and track academic argument;
 - follow discourse structure in text;
 - make inferences about and extrapolate from what they read;
 - demonstrate familiarity with and understanding of the conventions of visual and multimodal literacies, such as reading and interpreting graphs, pictures, flow-charts and diagrams; and
 - cope with basic numeracy.

Students however have difficulty with these expectations due to certain *student* epistemic practices and approaches to texts (as proposed by Slonimsky & Shalem 2005:86 in Scott et al 2007: 36):

- a propensity towards verbatim reproduction or plagiarism in essays;
- a propensity to describe rather than analyse, and to offer tautologies in place of justification;
- a propensity to focus on examples (tokens) rather than on principles (types) and the relation between them;
- a propensity to write from a highly subjective viewpoint without depersonalising;
- a propensity to be prescriptive or normative when asked to be analytic.

The second factor beyond higher education's control is the material condition of students (socio-economic conditions and student finance) (Scott et al 2007:37).

- Factors that are within higher education's control (as proposed by Scott et al 2007:38-40) are the following:
 - Affective factors and institutional cultures. Students' lack of success is related to their lack of motivation or anxiety and the impact of institutional cultures that often exclude students.
 - Improving the effectiveness of the educational process. Scott et al (2007:39) propose the educational process to not only mean teaching approaches, "but all aspects of the formal system, including the curriculum framework, the design of its component parts, assessment, and student support."
- A major educational strategy as proposed by Scott et al (2007:41-56) is reforming curriculum frameworks. The under-preparedness of students is not in dispute (Scott et al 2007:42). Scott et al (2007:42) however points out that under-preparedness "should not be equated with a fundamental inability to cope with higher education, though the term is sometimes used as a euphemism for this." Curriculum reform as proposed by Scott et al (2007:43) is a response to the current mismatch between the outcomes achieved at secondary school level and the demands of the entry into higher education programmes. Provision of foundational programmes should address the potential of talented but disadvantaged students. Scott et al (2007:44) state that

South Africa's core undergraduate programme structures were established early in the last century, when the student body was small and relatively homogeneous in educational and social background. The assumptions about prior learning and educational 'capital' on which our traditional curricula are based have essentially remained the same, and are not valid for the diverse intake of the contemporary higher education system. As long as these unitary assumptions remain dominant, the articulation problem will continue to undermine the development of many talented students (as the current performance patterns show), and will be exacerbated by any future growth in the diversity of the intake¹⁴.

Another dimension of the curriculum reforms proposed by Scott et al (2007:45) is to "allow for a steady increase in the intellectual demands on students coming from different starting points, the structure of a curriculum also needs to be flexible enough to accommodate differentials in the pace of progression."

Scott et al (2007:46) are at pains to point out that "[e]xit standards cannot be compromised, and must be demonstrably the same for all students achieving the qualification concerned. The main design challenge is thus to provide alternative paths to the same learning outcomes." The mismatch between the diversity of students and the current curriculum frameworks (three-year bachelors and national diplomas) shows that the current degree and diploma structures "are not effective for the majority of the student body" (Scott et al 2007:48).

¹⁴ We will return to the notion of educational 'capital' when proposing certain key constructs to inform the conceptual model.

- Scott et al (2007: 54-56) close their argument for curriculum reform by emphasising that due to the “insufficient continuity between these major educational phases, the problems are essentially systemic, and call for structural rather than peripheral or ‘remedial’ responses.” Given the diversity of the student body, more flexible curriculum and teaching frameworks will impact on the poor outputs (Scott et al 2007:55).

4.3 DIFFERENT MODELS EXPLAINING STUDENT THROUGHPUT

The purpose of this draft document is to explore different models with the purpose of developing Unisa’s own conceptual model. There are many existing models and theoretical frameworks. Many research findings regarding student throughput and success do not necessarily propose or develop a model, but rather highlight a number of variables and their impact on student retention and throughput. This section will attempt to investigate existing models as well as general pointers from research on retention.

4.3.1 AN OVERVIEW

There are different models explaining, mapping and predicting student experiences (eg Pascarella & Terenzini 1980). The fact that some students persist and decide to reregister for the module just failed can often (depending on context) be explained using these different models. Examples of these models are Tinto’s model of student integration (1982), the psychological model by Bean and Eaton (2000), the 3-P model of learning (Biggs 1989) and Ramsden’s contextual model (1984).

Some of the models focus on specific issues, eg the student *integration* model (Spady 1970); the causal model developed by Bean (1980); the path model also by Bean (1982); a structural model specifically regarding the role of finances in the persistence process (Cabrera, Nora & Castaneda (1992); a multinomial logit model of college stopout and dropout behaviour by Stratton, O’Toole and Wetzel (2008); a stage model by Tinto (1988); a bivariate probability model with sample selection by Montmarquette, Mahseredjian and Houle (2001); a logic regression analysis model by Cabrera (1994); an explanatory model on undergraduate non-completion by Ozga and Sukhnandan (1998); a structural equations modelling test of an integrated model by Cabrera, Nora and Castaneda (1993) and an event history model of student departure by DesJardins, Ahlburg and McCall (1999). This list is not a complete overview of all proposed models for understanding student throughput but includes representative examples of existing research. Models that focus specifically on distance education or non-traditional students include the conceptual model of non-traditional undergraduate student attrition by Bean and Metzner (1985); Laing and Robinson’s explanatory model (2003) on the withdrawal of non-traditional students; a longitudinal-process model by Kember (1989) and an estimation of a conceptual model by Metzner and Bean (1987).

4.3.2 GENERAL MODELS EXPLAINING STUDENT RETENTION AND THROUGHPUT

4.3.2.1 SPADY’S MODEL

One of the earliest (if not seminal) attempts to provide a comprehensive theory for understanding student throughput is the work by Spady (1970). In 1970 when his article was published, he bemoaned the fact that the research available at that time lacked “theoretical and empirical coherence” and a strong and definite theoretical basis (Spady 1970:64). In responding to this context, Spady proposes that the “task before us, then, is to move beyond a mere summary of

available studies of 'college success' toward a more interdisciplinary-based, theoretical synthesis of the most methodologically satisfactory findings and conceptually fruitful approaches to this problem" (Spady 1970:64). He acknowledges, however, that since

no one theoretical model can hope to account for most (let alone all) of the variance in dropout rates either within or across institutions, we suggest how a variety of currently distinct approaches may be combined within the framework of a single design in order to treat several clusters of relevant variables simultaneously.

Spady cautions that any successful model should steer away from exploring "a number of zero-order 'correlates' (independent variables) without either examining the relationships among them or testing for spuriousness" (Spady 1970:65). At the start of his exploration of pointers towards a theoretical model explaining student throughput, Spady highlights different definitions of student dropout: "*Definition 1* includes anyone leaving a college at which he is registered, and *Definition 2* refers only to those who never receive a degree from any college".¹⁵ Spady does allude to the fact that Definition 1 is methodologically much easier to handle than Definition 2. After discussing various concerns and challenges in both these definitions, Spady (1970:68) then concludes:

Definition 1 is methodologically convenient, but it fails to provide a broad enough perspective on the actual rates of retention and attrition pertinent to the system of higher education as a whole. Definition 2, however, requires the mobilization of immense data gathering and follow-up resources, which are further complicated by the elements of time, inter-institutional mobility, and the social stigma associated with the failure to persevere academically.

Spady (1970:68-77) explores different variables and clusters of variables, like

- background variables: parents, potential and past performance
- the sex-linked role of educational goals and interests
- personality dispositions: in search of the "mature" student
- interpersonal relationships: profane and profound

After discussing these variables and clusters of variables, Spady (1970:77) proposes a "sociological model of the dropout process". He acknowledges that no one model will be able to explain the impact of all variables, and some statistical methods may also jeopardise an attempt towards conceptualising such a model. He writes (1970:77):

Since no one theoretical model or research design could possibly systematize or operationalise the specific relationships among all of the variables mentioned so far in this discussion, we do not attempt the absurd. We recommend, however, that *with the more advanced multivariate statistical techniques and standardized computer programs now available, further a-theoretical, bivariate research on the "correlates" of dropping out should be abandoned* (italics in the original).

A crucial pointer towards the building of a conceptual model, according to Spady (1970:77), is

the assumption that the dropout process is best explained by an interdisciplinary approach involving an interaction between the individual student and his [sic] particular college environment in which his attributes (i.e., dispositions, interests, attitudes, and skills) are

¹⁵ This distinction is crucial for the effectiveness of any conceptual model attempting to provide a comprehensive theoretical understanding of student throughput.

exposed to influences, expectations, and demands from a variety of sources (including courses, faculty members, administrators, and peers). The interaction that results provides the student with the opportunity of assimilating successfully into both the academic and social systems of the college.

Like Tinto later, Spady proposes the development of a sociological model based on Durkheim's understanding of suicide. The following illustration (figure 2) is a graphic presentation of Spady's sociological model of the dropout process:

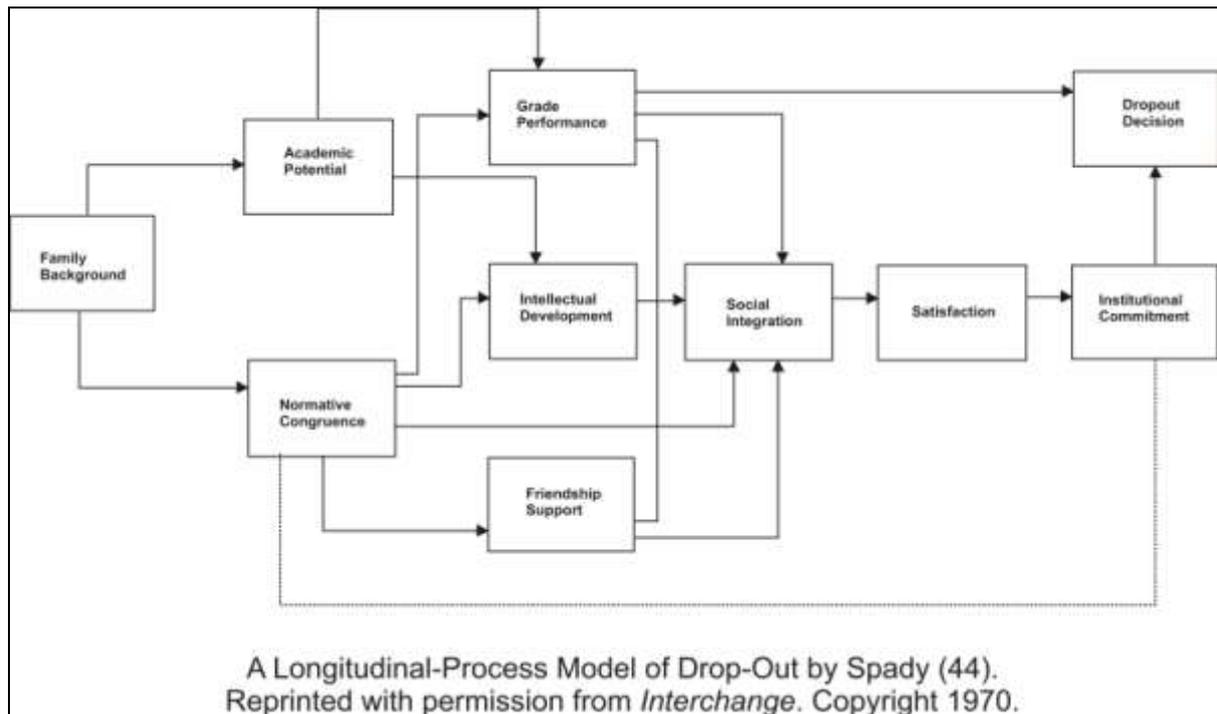


Figure 2: An explanatory sociological model of the dropout process (Spady 1970:79)

While most of the elements in the diagram speak for themselves, normative congruence as proposed by Spady needs explanation. Spady (1970:77) explains it as follows: "Within the social system, 'success' is defined first by having attitudes, interests, and personality dispositions that are basically compatible with the attributes and influences of the environment. This condition we call *normative congruence*."

The effect of normative congruence and its interrelation is described by Spady (1970:78):

The model as represented both implies a definite time sequence and depicts the assumed direct causal connections between pairs of variables. Its most problematic aspects involve the meaning and operationalisation of normative congruence, since so much is implied in this one component. It represents not only all of the student goals, orientations, interests, and personality dispositions discussed earlier, but the consequences of the interaction between these attributes and various subsystems of the college environment as well.

The broken line between institutional commitment and normative congruence implies

that the model is cyclical and flexible rather than immutable. We are suggesting here that the result of this whole process may lead to changes in attitude, interest, goals, or motivation that will in turn have repercussions at later stages of the college career. By

definition, these changes in personal attributes will alter the conditions subsumed under normative congruence and will affect the remainder of the process as a result (Spady 1970:79).

To understand Spady's notion of social integration and friendship support, it is necessary to understand his distinction between profane and profound friendship and support.

The profane refer primarily to what may be regarded as patterns of excessive and largely superficial socializing with casual acquaintances. Either this pattern or its attitudinal counterpart (a narcissistic or hedonistic orientation toward self and social relationships) is associated with dropping out in studies by Astin (1964), Trent and Medsker (1968), and Yourglic (1966). The dropouts in Hood's (1957) study had closer ties with upperclassmen rather than their own classmates, but the qualitative differences between the two, if any, are unknown (Wallace, 1966, notwithstanding). Otherwise, findings by Alfert (1966), Brown (1960), Hood (1957), Iffert (1958), Newcomb and Flacks (1964), Pervin (1966), and Spady (1967b) all suggest that an absence of "profound" relationships is definitely associated with attrition. By profound we mean relationships that imply significant meaning or closeness to the student (Spady 1970:76).

The next model we will explore shares with the Spady model its origins in Durkheim's theory on suicide and the central role of integration or congruence.

4.3.2.2 TINTO'S MODEL

Tinto's integration theory (1975) was one of the earliest models attempting to understand student throughput. Although Tinto developed certain aspects of his original model in later work, he has never departed from it. In a later article Tinto (1988:438) proposes that we should seriously consider the process of student departure as longitudinal. He proposes from anecdotal evidence that "the forces that shape departure during the first year of college, especially the first six weeks of the first semester, are qualitatively different from those that mould departure in the latter years of college" (Tinto 1988:439). Tinto therefore proposes insights from the fields of social anthropology (the work by Van Gennep) and sociology (Durkheim's theory of suicide) (like Spady 1970) to understand the processes underlying student persistence or dropout.¹⁶

Van Gennep, according to Tinto (1988), was fascinated by the "rites of passage" of individuals as they move between communities. Van Gennep was interested in the "life crises" that occurred during an individual's life over the course of a lifetime and he "saw life as being comprised of a series of passages leading individuals from birth to death and from membership in one group or status to another" (Tinto 1988:440). Van Gennep identified three distinct phases, namely separation, transition and incorporation (Tinto 1988:440).

Tinto then applies these three stages to the "rites of passage in the college student career" (Tinto 1988:442-447). When students enrol in higher education they separate themselves from previous lifeworlds and enter a phase of transition. This transition period often involves relocation to the site of learning, but also transition from previous beliefs and epistemologies to new ways of being and thinking.¹⁷

¹⁶ For a full discussion on Tinto's exploration of Van Gennep's theory, see Tinto (1988).

¹⁷ As later explored by Barnett (1996).

The following diagram (figure 3) provides an overview of Tinto's model of integration:

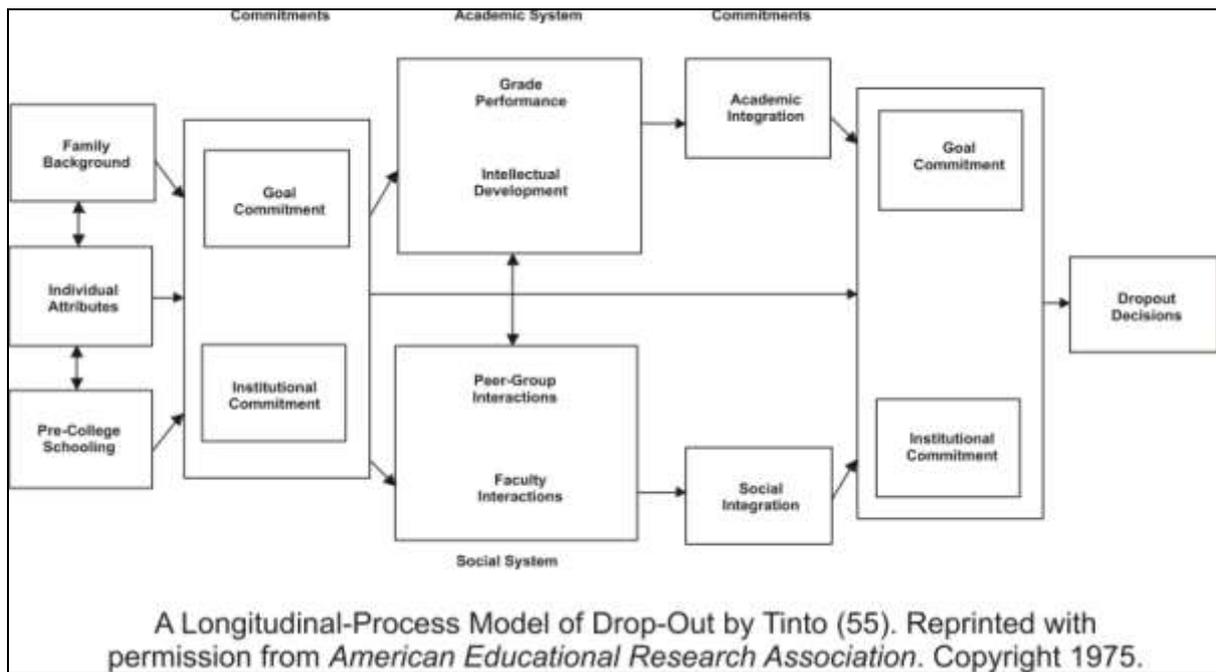


Figure 3: Tinto's model of integration (Tinto 1988)

Tinto's theory is founded on the incongruence between students and institutions. His theory "asserts that the matching between the student's motivation and academic ability and the institution's academic and social characteristic help shape two underlying commitments: commitment to an educational goal and commitment to remain with the institution" (Cabrera et al 1993:124). Tinto examines each of the stages as proposed by Van Gennep (Tinto 1988:443-447) and explores the disorientation and disequilibrium that occurs when students enter higher education, the loss and bewilderment that awaits them in this new community and how they are incorporated into this community.

Based on his application of Van Gennep's rites of passage, Tinto then proceeds to petition for an expanded theory of student departure (Tinto 1988:447): "Rather than offering a conflicting view of departure [from previous studies], the view described here adds a time dimension by describing the longitudinal stages of the process of integration, in particular the early phases of separation and transition which precede incorporation into the life of the college".

A major gap in Tinto's model, according to Cabrera et al (1993:124), "has been the role of external factors in shaping perceptions, commitments and preferences". Ozga and Sukhmandan (1998:317) raise two important criticisms against Tinto's model. Their first concern is Tinto's "lack of specificity about integration, together with his focus on the student as the problem [which] has encouraged researchers attempting to use his model to become pre-occupied with the manipulation of variables in an attempt to uncover causality". Their second concern or caution is the fact that Tinto's model "is arguably of limited use in the British context due to the different cultural and policy contexts for HE" (Ozga & Sukhmandan 1998:317-318).¹⁸

¹⁸ For a very comprehensive exploration of the gaps and potential in Tinto's theory on student departure, see Braxton (2000).

4.3.2.3 BEAN'S MODEL (1980, 1982)

Before we turn to the discussion of Bean's model, it is important to highlight that his research in 1980 had as a sample students from a *single* higher education institution. "Second, the subjects selected for analysis had to conform to the following criteria: under 22 years of age, Caucasian, U.S. citizens, non-Hispanic, single, first semester, first-time freshman, not transferred from other institutions" (Bean 1980:177).¹⁹

He starts his exploration towards his model by referring to the work of Tinto (1975) and Spady (1970). He states that both of these models "of student attrition were based in part on Durkheim's theory of suicide (1961)" (Bean 1980:156). The link between dropping out of school and suicide is suggested as a theoretical basis for those models, *but there is insufficient evidence for this premise*. As opposed to the work by Tinto and Spady, Bean derives his approach from "studies of turnover in work organizations, primarily from the work of Price (1977)" (Bean 1980:156). He sets out his objectives with this research as follows (Bean 1980:157):

- to develop a causal model adapted from employee turnover in work organisations
- to test the explanatory power of this model of student attrition
- to rank the variables by the extent to which they explain variations in student attrition

The following table (table 2) provides information on the different variables Bean takes into account as well as their definitions:

Table 2: List and definition of variables

Variable	Definition
<i>Background variables</i>	
Performance	The degree to which a student has demonstrated past academic achievement
Socioeconomic status	The degree to which a student's parents have achieved status through occupational level.
State Resident	Being a resident of the state where the IHE is located
Distance Home	Distance to a student's parents' home.
Hometown Size	Size of community where a student spent the most time while growing up.
<i>Organisational determinants</i>	
Routinisation	The degree to which the role of being a student is being repetitive.
Development	The degree to which a student believes that he/she is developing as a result of attending the IHE.
Practical value	The degree to which the student perceives that his/her education will lead to employment.

¹⁹ Bean in this 1980 study only "discloses" this significant research decision when he discusses his findings towards the end of the article. He neither motivates his selection nor explains why he excluded other variables. His exclusion of older learners as well as learners from other cultural and ethnic groupings does impact on the use of his pathway model in, for example, a South African, highly diverse higher educational setting.

Institutional quality	The degree to which the IHE is perceived as providing a good education.
Integration	The degree to which a student participates in primary or quasiprimary relationships (has close friends).
University GPA [grade point average]	The degree to which a student has demonstrated a capability to perform at the IHE.
Goal commitment	The degree to which obtaining the bachelor's degree is perceived as being important.
Communication (Requirements) (Rules)	The degree to which information about being a student is viewed as being received.
Distributive justice	The degree to which a student believes that he/she is being treated fairly by the institution; i.e., receives rewards and punishments proportional to the effort expended in the student role.
Centralisation	The degree to which a student believes that he/she participates in the decision making process.
Advisor	The degree to which a student believes that his/her advisor is helpful.
Staff/faculty relationship	The amount of informal contacts with faculty members.
Campus job	The necessity of having a campus job to stay in school.
Major (area)	The area of one's field of study.
Major (certainty)	The degree to which a student is certain of what he/she is majoring in.
Housing	Where a person lives while attending the IHE.
Campus organizations	The number of memberships in campus organizations.
Opportunity (Transfer) (Job) (Home)	The degree to which alternative roles (as a student, employee, or dependent) exist in the external environment.
<i>Intervening variables</i>	
Satisfaction	The degree to which being a student is viewed positively.
Institutional commitment	The degree of loyalty toward membership in an organisation.

(Bean 1980:159-160)

With these definitions in mind, it makes it easier to understand Bean's causal model as illustrated in the next figure (figure 4):

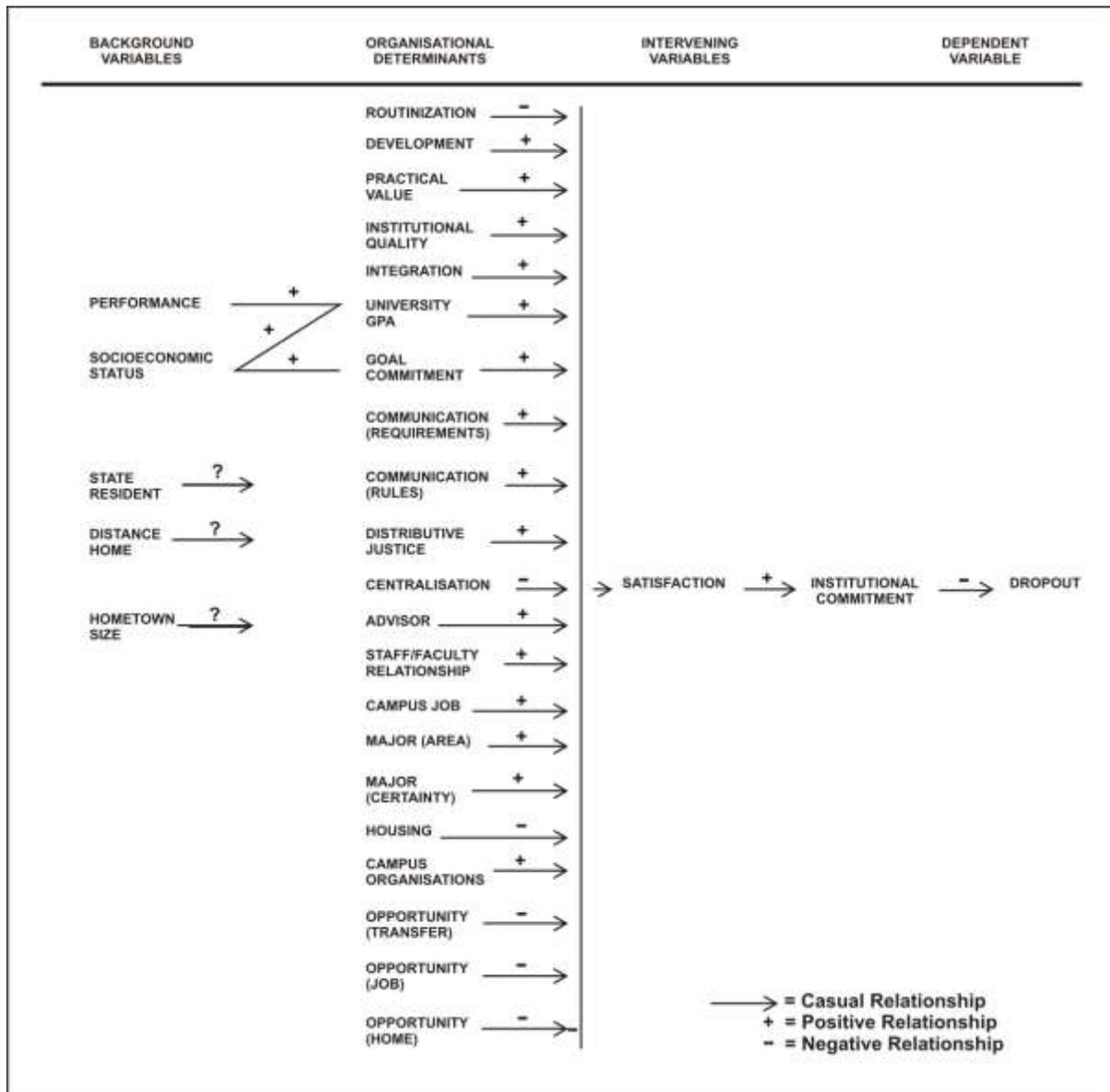
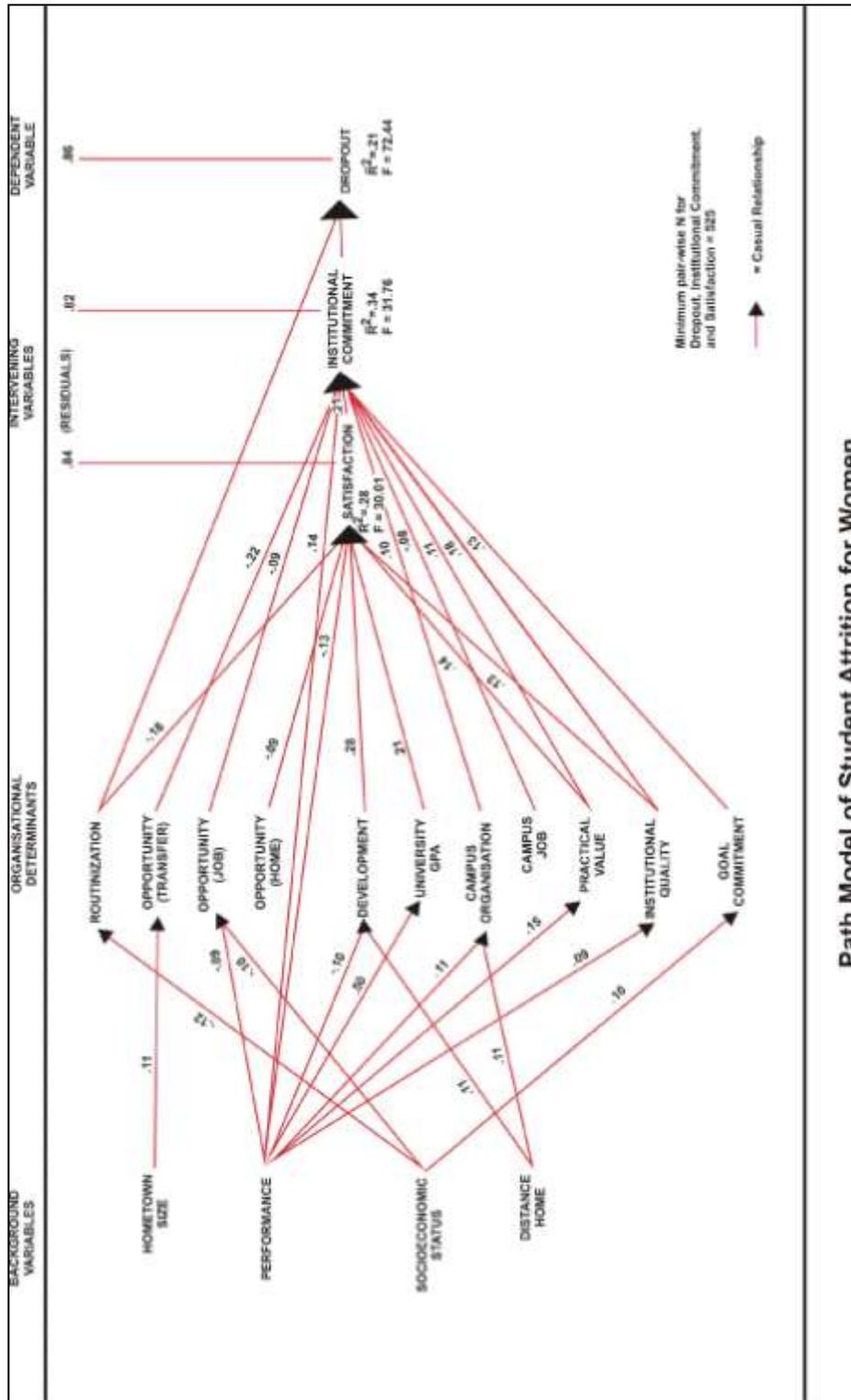


Figure 4: Bean's causal model of student attrition

Significant in Bean's model is the four layers of variables he proposes, namely background variables, organisational determinants, intervening variables and dependent variables. Bean (1980:160) cautions that this model is tentative. "It should be indicated here that the model is quite tentative, and the label 'causal model' is not meant to imply great sophistication. No model in the social sciences is likely to do away completely with the problem of spuriousness."

Bean then continues to design two path models, one to explain female student attrition (figure 5) and a second to explain student attrition for men (figure 6).



Path Model of Student Attrition for Women

Figure 5: Path model of student attrition for women (Bean 1980:174)

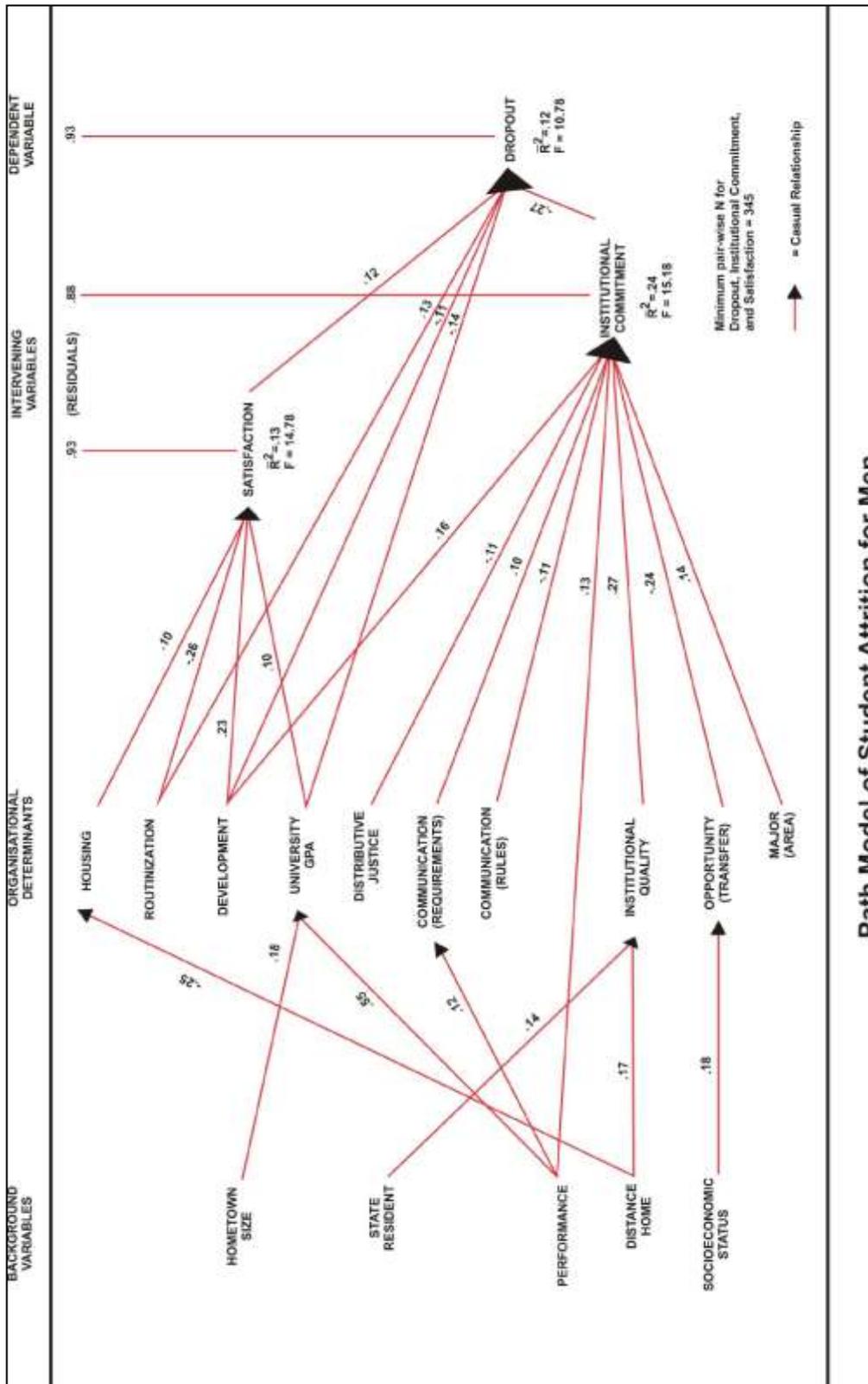


Figure 6: The path model of student attrition for men (Bean 1980:176)

These path models are the results of two statistical procedures that were used to analyse the data. Bean (1980:165) firstly used multiple regression and secondly path analysis.²⁰ In his discussion of the findings Bean (1980:177-179) points to the way the path models (figures 5 and 6) differ from the causal model (figure 4).

- *The final model for women* differed from the causal model ... in a number of ways. It should be noted that institutional commitment was the primary variable influencing dropout.
- Second, the determinants borrowed from the causal model of turnover--including routinisation, three measures of opportunity (transfer, job, home), the pay surrogate measures of development, university GPA, practical value, and institutional quality, along with satisfaction--dominate the causal model.
- Of the background variables, performance was clearly the most important. Besides directly affecting institutional commitment and satisfaction, performance also significantly influenced six other determinants.

Regarding the final model for men, Bean also points to the differences between the proposed causal model and the findings in the path model (Bean 1980:178):

- Again, institutional commitment was the most significant variable influencing dropout (by itself accounting for 9 percent out of 12 percent of the variance explained in dropout), and four other variables were significantly related to dropout. A deviant finding was produced for satisfaction, which was positively related to dropout.
- Routinisation, development, and university GPA were all related to development in the expected direction.
- Satisfaction was not significantly related to institutional commitment, and therefore, its status as an intervening variable for males is in question.

Regarding the explanatory power of the final model, Bean writes (1980:178): "The total explanatory power of the final model in predicting dropout was .21 for females and .12 for males, as measured by the *adjusted R 2*." Bean develops a decomposition of the total causal effects on dropout, firstly for females and then for males (table 3).

²⁰ For the reasons why Bean chose specifically these two methods, see Bean (1980:165).

Table 3: Decomposition of the total causal effects on dropout (Bean 1980:180)

	Direct effects	Indirect effects	Total effects	Rank
<i>Women</i>				
Institutional commitment	-.47	—	-.47	1
Performance	-.05	-.09	-.14	2
Campus organizations	-.06	-.05	-.11	3
Practical value	-.04	-.07	-.11	4
Opportunity to transfer	.00	.10	.10	5
Development	-.06	-.03	-.09	6
Routinization	-.10	.02	-.08	7
Goal commitment	-.02	-.06	-.08	8
Satisfaction	.02	-.10	-.08	9
Communication (rules)	.08	-.01	.07	10
Centralization	-.07	.00	-.07	11
Distributive justice	-.06	.00	-.06	12
Staff/faculty relationship	-.06	.00	-.06	13
<i>Men</i>				
Institutional commitment	-.29	—	-.29	1
University GPA	-.16	.01	-.15	2
Satisfaction	.14	.00	.14	3
Development	-.13	-.01	-.14	4
Routinization	.15	-.03	.12	5
Communication (rules)	-.13	.03	-.10	6
Housing	-.09	.01	-.08	7

Bean (1980:183) summarises his findings as follows:

- First, the model tested in this research proved useful in analyzing the process of student attrition. The determinants in this model accounted for 21 percent of the variance in dropout for females, and 12 percent of males. Thus, studies of turnover and work organizations are useful in the analysis of student attrition.
- Second, men and women leave the university for different reasons. Institutional commitment, however, was the most important variable in explaining dropout for students in both sexes. One major difference appears to be that men left the university even though they were satisfied, whereas women who were satisfied were more committed to the institution and were less likely to leave.
- Third, opportunity variables, which have not received much previous study, were important in determining institutional commitment. Opportunity (transfer) had the highest path coefficient for those variables significantly related to institutional commitment for women, and the second highest coefficient for institutional commitment for men. In terms of dropout, opportunity (transfer) was ranked fifth for women, but did not have total causal effects above .05 for men.
- From this study, one may characterize a man who dropped out as follows: The student was not committed to the institution, did not have a high university GPA, was satisfied with being a student, did not believe that the education he was receiving was leading to

his development, found his life repetitive, did not know the social and academic rules of the institution well, and may have lived with his parents.

- One may characterize a woman who dropped out as follows: The student was not committed to the institution, did not perform well in high school, did not belong to campus organizations, did not believe that going to college would lead to employment, perceived an opportunity to transfer, did not believe that education leads to self-development, did not find daily life at college repetitive, was not committed to getting a bachelors degree, was not satisfied with being a student at the institution, knew the social and academic rules of the institution, did not participate in decision making, did not feel that she was being treated fairly, and did not meet with staff and faculty members informally.

Bean (1980:184) does acknowledge that these causes for attrition for men and women may be oversimplified, but at least provide pointers for an increased understanding of the phenomenon.

What is interesting from this research for the purposes of conceptualising a Unisa model are the eight recommendations that Bean (1980:184-185) provides at the end of the article:

1. *Faculty members, as well as student affairs staff, should be advised that men and women leave universities for different reasons. Any programme designed to reduce student attrition should take these differences into account.*
2. *Admit students with the highest high school grade point averages possible. There may be good reasons for exceptions to this recommendation, but if more students who performed poorly in high school are admitted, the dropout rate among these students is likely to be higher than for other students.²¹*
3. *The staff and faculty of an IHE should realize that the perceived quality of the education the student is receiving is one of the most important variables for both men and women in influencing institutional commitment.*
4. *Encourage or require women to join campus organizations. This seems to accomplish two things: women who are members of campus organisations (a) feel greater self-development than other women, and (b) are better integrated into the institution and less likely to leave.*
5. *In recruiting and orientation programs, emphasize the usefulness of a women's education for her securing future employment. The stereotype of a woman going to a higher education institution just to get married does not hold true. Women who stay at these institutions are interested in employment after graduation.*
6. *Maintain an active and effective placement program, focusing on employment opportunities for women. Talk about career placement is not nearly as effective as a good placement record, and to achieve that, resources must be spent in developing an effective placement programme.*
7. *Offer an educational program which provides the best opportunity for men to feel that they are developing personal, intellectual, creative, and interpersonal skills.*

²¹ This stands in stark contradiction to the impact of the massification of higher education in the context of Unisa.

8. *Avoid too rigid scheduling for men in their first semester.* Men who find that their life at an HE institution is too repetitive are more prone to leave.

In concluding his article, Bean points to the need to increase the heterogeneity of the sample and test the model in different higher education institutions. He also cautions that variables should be added and/or deleted according to the context. In a follow-up study, Bean (1982) further explores interaction effects in a path model regarding student attrition, intentions and confidence.²² His list of variables from most to least important as predictors for throughput is valuable for growing Unisa's understanding of throughput. The mean ranking (according to Bean 1982) is as follows:

1. Intent to leave
2. Grades
3. Opportunity to transfer
4. Practical value
5. Certainty of choice
6. Loyalty
7. Family approval
8. Courses
9. Student goals
10. Major and occupational certainty²³

From the 23 variables in the first study by Bean (1980), this study (1982) has reduced the number of variables to 10 independent ones. In this study no background variables were taken into account. The recommendations Bean (1982:318-319) proposes at the end of this study may provide pointers for further contemplation in Unisa's context:

1. Develop the motivation and learning skills of students so that their grades can rise. The influence of low grades on dropout is important and real.
2. Demonstrate to the students how any major they choose can be of practical value, that is, important for employment opportunities after graduation. This action can be taken directly by the institution, through special programs, but the faculty who are in daily contact with the students should know how the subjects they teach will later fit into a career. It is often the conceptual, analytical, or communication skills developed rather than the course content that are important to the future employer. Only poorly taught courses may be "irrelevant."
3. Create a desirable image of the school and identify reasons to be loyal to it through the faculty and staff action, as well as by co-curricular programs for students and outreach

²² For a full discussion on this research, see Bean (1982). For the sake of this draft paper we will only look at the findings. The basis for understanding Bean's theory on student attrition did not change since the research in 1980.

²³ For a full discussion on each of these variables, see Bean (1982).

programs for parents and prospective students. Provide a supporting environment for students who are concerned about whether or not they made the right choice in coming to the school; offer programs that create loyalty to the institution through the use of rituals, co-curricular experiences, and written material, and pay attention to what parents think about the institution.

4. Offer courses the students think that they want to take, either by marketing the curriculum in place or by modifying the course offerings to meet student needs and demand.
5. Develop the student's educational goals. Make clear to the student what the degree options are in various fields and what the expected outcome or value of the degree will be.

4.3.2.4 A *THEORETICAL* FRAMEWORK BY CABRERA, NORA AND CASTANEDA (1993)

Cabrera, Nora and Castaneda (1993) explore the theoretical frameworks of Tinto's student integration model and Bean's student attrition model. They specifically explore the effects when these two models are merged. The possibility of merging these two models is based on considerable overlap between them (Cabrera et al 1993:125). Cabrera et al (1993:126) explain the differences between these two models as follows:

Unlike the Student Integration Model, the Student Attrition Model emphasises the role of factors external to the institution in affecting both attitudes and decisions. Furthermore, the Student Integration Model regards academic performance as an indicator of academic integration, whereas the Student Attrition Model regards college grades as an outcome variable resulting from academic experiences and social-psychological processes.

Both these models differ about which factor influences most student throughput and attrition as explained by Cabrera et al (1993:126):

Whereas research on the Student Integration Model appears to suggest that academic integration, social integration, institutional commitment and, to some extent, goal commitment, exert the highest effects on persistence, research on the Student Attrition model emphasises the role of intent to persist, attitudes, institutional fit, and external factors in the form of family approval of institutional choice, friends' encouragement to continue enrolment, finance attitudes, and perceptions about opportunity to transfer to other institutions on withdrawal decisions.

In the light of the significant shared and different foci of these two models, Cabrera et al (1993:126) propose that these two theories or models of student throughput are not orthogonal but can be seen as supportive to each other. They integrate the baseline propositions of these two models in a hypothetical model (figure 7):

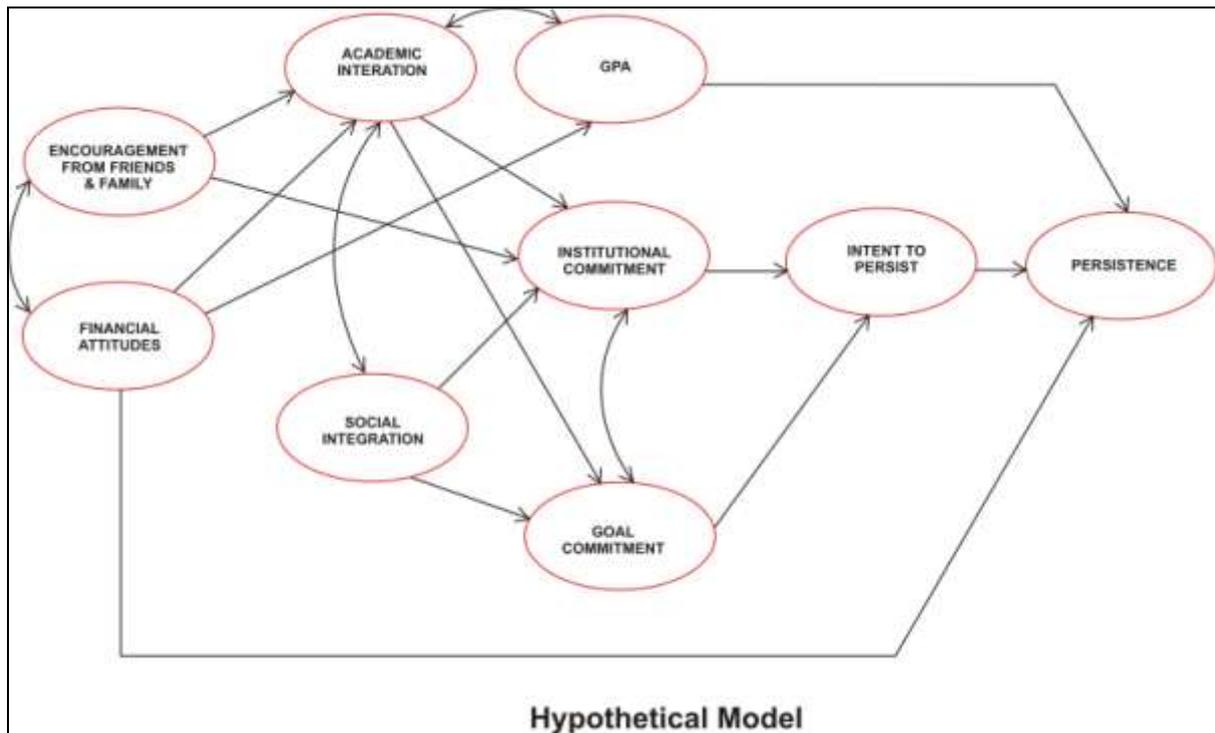


Figure 7: The first hypothetical model (Cabrera et al 1993:128)

In this model, the different courses and academic integration are combined in academic integration, while institutional fit and quality are combined into the category of institutional commitment. Important in this hypothetical model is the fact that Cabrera et al (1993:128) found that grade point average was a poor indicator of academic integration. This model therefore proposes the separation between GPA and academic integration. Factors such as finance attitudes and encouragement from friends and family (environmental factors) were found to have a huge impact on academic integration, commitment to the institution as well as on persistence decisions (Cabrera et al 1993:128).

For the interest of developing Unisa’s conceptual model it is worthwhile exploring how Cabrera et al (1993:130-131) explore these different variables.

Environmental factors

- “My family approves of my attending (institution).”
- “My family encourages me to continue attending (institution).”
- “My close friends encourage me to continue attending (institution).”

Finance attitudes

- “I am satisfied with the amount of financial support (grants, loans, family, jobs) I have received while attending (institution).”

Endogenous variables (the multiple measures of academic integration)

- “I have performed academically as well as I anticipated I would.”
- “I am satisfied with my course curriculum.”
- “I am satisfied with my academic experience.”

Social integration

- “Since coming to this university I have developed close personal relations with other students.”
- “It has been easy for me to meet and make friends with other students at (institution).”

Institutional commitment

- “I am confident I have made the right decision in choosing to attend (institution).”
- “It is very important for me to graduate from (institution) as opposed from some other school.”
- “I feel I belong at (institution).”
- “My education at (institution) will help me secure future employment.”
- “My close friends rate (institution) as a quality institution.”

Goal commitment

- “It is important for me to get a college degree.”
- “It is important for me to finish my program of study.”
- “It is likely that I will re-enrol at (institution) at next fall.”

In the subsequent research testing these variables, Cabrera et al (1993:131) found the following (figure 8):

for the presumed role of external factors facilitating the transition of the student into the academic component of the institution, as well as the effect of encouragement from friends and family on commitments to the institution. Those structural paths not found to be statistically significant included the direct effect of Finance Attitudes on persistence behaviour ($\gamma = 0.001$), the effect of Academic Experiences on institutional Commitments ($\beta = 0.001$), and the effect of Social Integration on Goal Commitment ($\beta = -0.058$).

A summary of their findings is as follows (Cabrera et al 1993:135-136)²⁴:

- A better understanding of persistence becomes possible in the combination of Tinto and Bean's models.
- "Results indicated that when these two theories were merged into one integrated model, a more comprehensive understanding of the complex interplay among individual, environmental, and institutional factors were achieved".
- The effect of the environmental factors was "far more complex" than Tinto's model proposes. "Where Tinto constrained the role of environmental factors to merely shaping commitments, the present study suggests that these factors exert an influence in the socialisation and academic experiences of students".
- Cabrera et al suggest that the environmental factors should not only consist of encouragement from significant others. They propose that other environmental factors should be built into this category.²⁵
- These authors also warn that the generalisability of these findings to other institutions should be approached cautiously. They caution that "the patterns underlying the college persistence process may vary by type of institution, the setting, and the composition of the student enrolment".

4.3.2.5 AN EVENTS HISTORY MODEL (DESJARDINS, AHLBURG & MCCALL 1999)

DesJardins, Ahlburg and McCall (1999:376) motivate their events history model as follows:

One of the goals of this study is to help develop a better understanding of student departure from college. Most theories of student departure have been effective at describing student departure but quite ineffective in explaining this process (Tinto, 1993). By shedding light on the longitudinal nature of the process of student departure, we hope to provide a method that will better enable us to describe *and* explain student departure from college. Although it is widely appreciated that the process of student departure from college is dynamic, previous studies have either ignored the timing of stopout (temporarily leaving college), dropout, or graduation or have focused on a convenient time frame, such as tracking students from fall-to-fall or examining departure before and after an arbitrarily chosen point in time (4 or 5 years).

According to these authors, an event history model "allows us to incorporate a more exact timing of departure into the estimation of student exits from college and permits a more appropriate utilization of longitudinal data" (DesJardin et al 1999:376). Rather than specifying the structural paths through which different variables affect student departure decisions, their study

²⁴ For a full discussion on their final model see Cabrera et al (1993:134).

²⁵ The conceptualisations of Aikenhead (1996) and Schenck (2008) are two possible sources to enrich the conceptualisation of the environmental category.

uses a reduced-form model that focuses on pre-college, demographic, certain current-achievement, institutional, and financial variables. Incorporating variables used in the structural studies allows us to include the internal factors found to be important by the integration models and the external predictors that have had significant effects in the attrition models.

DesJardins et al continue to map their use of an event history model against its most frequent use in economic research. This type of modelling has been used very infrequently in education research. This, according to these authors, is owing to “a lack of a coherent methodology that allows researchers to model longitudinal risk profiles as a function of multiple predictors *and* incorporate data problems often found in longitudinal designs (e.g. ‘censoring’)” (DesJardins et al 1999:377). One of the advantage of this model, according to DesJardins et al (1999:377), is that it requires “only variables typically available to most institutions; no expensive surveying is necessary to collect the attitudinal data which is often used in other student departure research”.

They describe their empirical model as “a discrete-time hazard model since the duration data is collected term-by-term until the occurrence of the event (first stopout, dropout, or graduation)” (DesJardins et al 1999:377). They define the first stopout as “the *first* occurrence of non-continuous enrollment” (DesJardins et al 1999:377). Graduation is defined as “the awarding of a bachelor’s degree anytime within the (approximately) seven-year window”. They define dropout in two ways (DesJardins et al 1999:377):

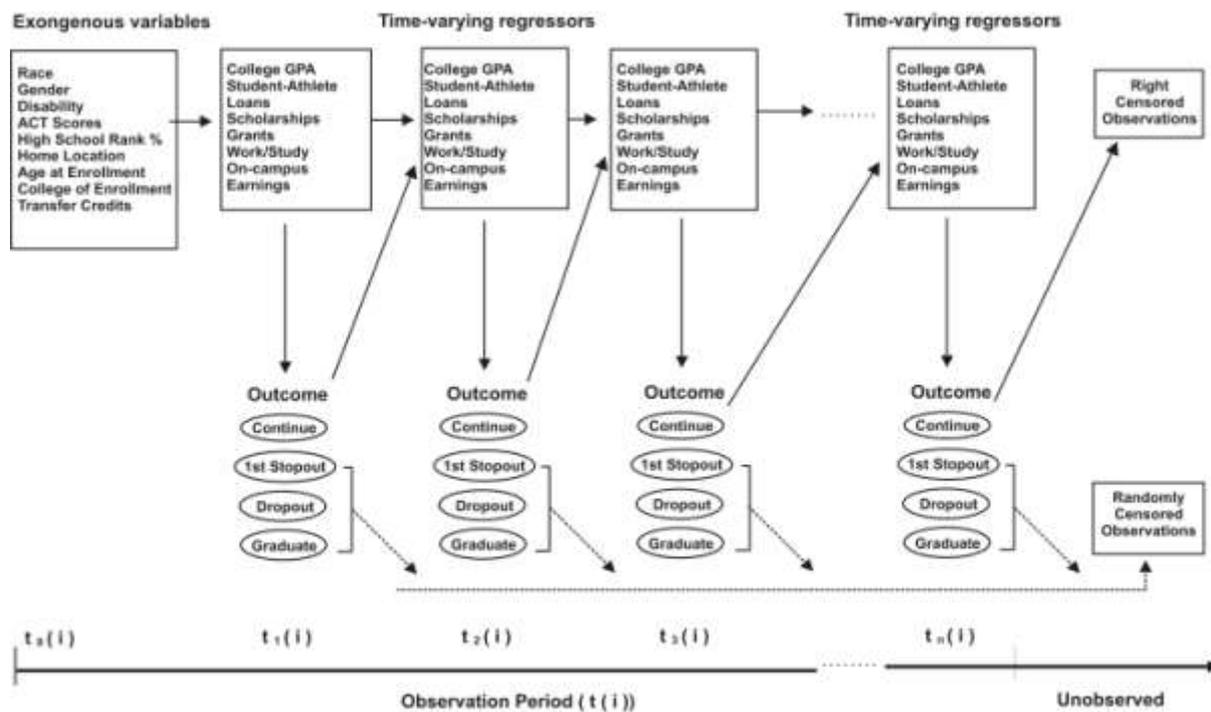
First, a student is defined as a “dropout” if he or she exits the institution and does not return at any time during the subsequent observation period (the total observation period is 22 terms, or a little more than 7 years). Under the second specification a student who drops out *within the first 5 years* of the observation period is defined as a “censored dropout.” The latter definition is included as a robustness check of the original dropout model since the results obtained under the original definition may depend on how much time students have to re-enrol.

DesJardins et al (1999:377) explains their model as follows:

During each term there are four possible outcomes of interest, each depicted by an oval. Exogenous and time-varying factors are hypothesized to affect a student’s (individual *i*) enrolment decision at discrete points (time *t*) during their academic career. Since the values the exogenous variables assume are constant, they are displayed only once in the framework. However, even though the *values* that the exogenously determined variables take may not change over time, the *effects* they have on student departure may vary over time. Thus, it is important to include these variables as regressors in each subsequent time period. Time-varying regressors, since their *values and effects* can change over time, are depicted in separate boxes at each discrete time period. Thus, the inclusion of “exogenous” and “time-varying” regressors constitute all of the variables specified in the longitudinal models estimated in this paper.²⁶

The following diagram (figure 9) is taken from the article by DesJardins et al (1999:378):

²⁶ For a full discussion of their model see DesJardins et al (1999).



Reduced-form model of first stopout and dropout. Adapted from Johnston (1984, p. 8).

Figure 9: Reduced-form model of first stopout and dropout (DesJardins et al 1999:378)

In discussing their findings, DesJardins et al indicate that their findings confirm earlier studies on the one hand, but also differ on the other.²⁷

4.3.2.6 AN EXPLANATORY MODEL (OZGA & SUKHNANDAN 1998)

Ozga and Sukhnandan (1998:316) suggest that the causes of non-completion are best understood as a complex social process in which the main factors are *student preparedness* and *compatibility of choice*. However, as emphasised below, these factors should not be regarded as a problem originating with the student but more **as a result of interaction** between student and institution. They summarise the limitations of research on throughput in the context of the UK as follows (Ozga & Sukhnandan 1998:318-319):

- Research “has tended to focus predominantly on the student as the problem and to underplay the effects of the interaction between student and institution”.
- Studies have paid insufficient attention to the changing context of HE and the effects which this has on: (a) the significance of particular variables in the light of an expanding, and increasingly diverse, student population; (b) students in terms of their orientation towards HE given the present economic climate, changes in the post-18 labour market, changes in students’ financial circumstances and changes in students’ experiences of HE support and provision; and (c) institutions in terms of increased competition for students and the growing importance of positioning in the HE market.

²⁷ For a full discussion on their findings, see DesJardins et al (1999:387-389).

Ozga and Sukhnandan (1998:319) did a qualitative study to develop an explanatory model. They state that their research “supported the argument that non-completion **cannot** be understood solely by investigating particular student attributes or institutional practices” (emphasis added). Though some of the known variables have been supported by their evidence, there were also instances (eg the maturity of the student) where their research proves contradictory to the notion that mature students’ reasons for withdrawal are the same as those of younger learners. “It is therefore argued that non-completion results from a complex social process of student - institution negotiation, in which the main elements may be characterised as student preparedness and compatibility of choice” (Ozga & Sukhnandan 1998:320).

The following figure (figure 10) provides an illustration of their explanatory model:

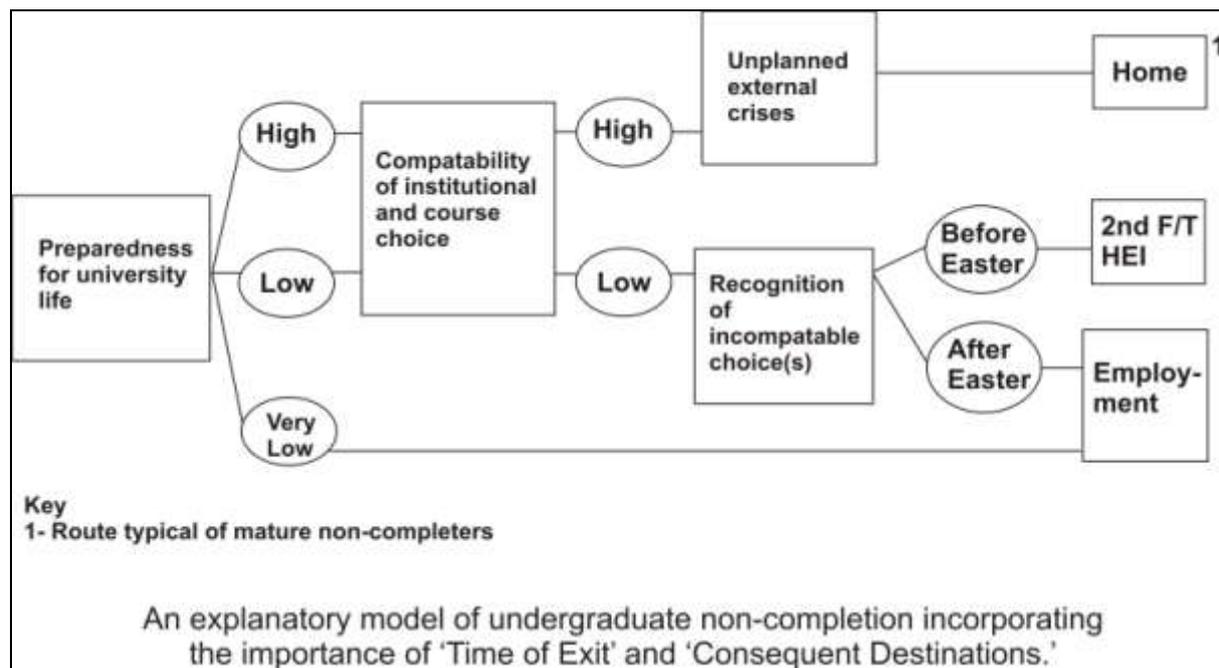


Figure 10: Ozga and Sukhnandan’s explanatory model (1998)

With regard to the category of Preparedness for university life, Ozga and Sukhnandan (1998:321) found that

[a]lthough all conventional students appeared to have similar low levels of preparedness, in terms of their prior perceptions and expectations of university life, what appeared to improve completers’ levels of preparedness and compound non-completers’ levels of preparedness was their reasons for choosing to enter HE. Completers tended to make proactive choices to enter HE, emphasising the importance of personal interests, ambitions and career opportunities. In contrast, non-completers’ often chose to enter HE for reactive reasons, such as the expectations of parents, friends, teachers and because it was a “natural progression” having gained the necessary entrance requirements...

Ozga and Sukhnandan (1998:322) further caution that students’ level of preparedness for HE may change over time and that their “level of preparedness for university life does not in itself predetermine their chances of completing a university degree as it represents only one of the two major factors which influence a student’s completion status”.

With regard to the category of Compatibility of choice, Ozga and Sukhnandan (1998:322) found that students’

... reliance on indirect sources of information - teachers, parents and friends - and carefully marketed university prospectuses and open days again provided them with outdated, biased and inaccurate information from which to make their choices. Inevitably few of these students found their perceptions and expectations of their university or course to be accurate on arrival.

These authors found that where students are not studying at institutions of their first choice, their compatibility with the institution is severely compromised (Ozga & Sukhnandan 1998:323).

In the process of exiting, finances, academic relations, social experiences and residential facilities play “only a secondary role in non-completers’ decisions to withdraw” (Ozga & Sukhnandan 1998:325). The early warning systems used by the different departments to

... identify students who were experiencing difficulties appeared inadequate given the speed with which most non-completers decided to withdraw. In addition, although departments did provide a range of formal student support services, their effectiveness was difficult to assess as few effective monitoring procedures were in place (Ozga & Sukhnandan 1998:326).

Ozga and Sukhnandan’s major finding (1998:326-327) was that the process of non-completion was quite different for younger students than for mature students. Where younger students often relied on secondary or untrustworthy sources for institutional information, mature students prepare themselves more and also more effectively than their younger counterparts. These authors (Ozga & Sukhnandan 1998:327) also found that mature students

were forced into non-completion because of external circumstances that required their presence at home or in paid employment. In our study, these circumstances contributed to a falling-off in previously very satisfactory academic performance for this group. **Mature students did not leave because they could not cope with the demands of their courses, but because other responsibilities became paramount** (emphasis added).

In Ozga and Sukhnandan’s opinion (1998:329), the study showed that

in general, conventional non-completers’ under-preparedness for university life combined with their incompatible choice-making do contribute to their eventual withdrawal. It has also briefly highlighted the ways in which these factors may combine with elements in the management of students so that opportunities to intervene appropriately are not taken.

4.3.2.7 THE USE OF LOGISTIC REGRESSION ANALYSIS IN HIGHER EDUCATION (CABRERA 1994)

Although not a model, this research by Cabrera (1994) brings to the fore the impact of the *choice* of analysis methods in understanding student throughput. In introducing his research, Cabrera (1994:225) states that two problems confront educational researchers investigating student throughput. The first he identifies is the fact that “college outcomes are the product of an array of factors in which both student characteristics and those of the institution interact among themselves” and that many “college outcomes are dichotomous in nature. There are no interval scales to describe such behaviours. Either an individual attends college or not, majors in hard sciences or not, stays or leaves the institution, or obtains a bachelor degree or not” (Cabrera 1994:225).

Cabrera continues to explore the fact that the task of quantifying the effects of the different variables under consideration is challenging. From the array of statistical methods available, “few of

them conform to the specific dichotomous nature of outcome measures such as enrolment, persistence, and degree attainment” (Cabrera 1994:225).²⁸ Cabrera, however, acknowledges that the use of logistic regression is not without controversy (Cabrera 1994:249). In evaluating the concerns confronting the use of logistic regression over ordinary least squares (OLS) regression, Cabrera maintains that logistic regression “conforms with the probability function underlying the relationship between a dichotomous outcome and corresponding independent variables” (Cabrera 1994:254).

4.3.2.8 A BIVARIATE PROBABILITY MODEL WITH SAMPLE SELECTION (MONTMARQUETTE, MAHSEREDJIAN & HOULE 2001)

Montmarquette et al (2001:475) locate their use of a bivariate probability model against the specific background of Canadian residential higher education, and more specifically the *Université de Montréal*. The American and Canadian debates form the macro-context in which requirements to enter higher education are seen to be key in addressing low throughput. Student throughput as a social issue foregrounds the expectation that higher throughput will necessarily make society better off (Montmarquette et al 2001:475).

In their research Montmarquette et al (2001:476) highlight the highly dynamic relations between those attending university and at the same time, exploring employment opportunities.

In informational terms, the problem of persistence may be viewed as an interaction between an experiment in school and an experiment in the labor market. Both experiments have opportunity costs that are important to note. If the individuals decide to experiment with the labor market, they forego the benefits of a university education.

In applying their bivariate model Montmarquette et al (2001:479-482) found the following:

- Part-time university students exploring at the same time employment opportunities have a higher probability of dropping out than full-time students. Montmarquette et al, however, indicate that they “still have to consider the student’s time opportunity cost of forgone earnings or the opportunity cost of renouncing to complete a university education”.
- Class size affects the probability of persistence in a non-linear way. A group of less than 87 students will increase the probability of persistence over an early dropout.
- An interesting finding of the research findings by Montmarquette et al is the impact relocating in order to study has on student persistence.

4.3.2.9 A MULTINOMIAL LOGIT MODEL OF COLLEGE STOPOUT AND DROPOUT BEHAVIOUR (STRATTON, O’TOOLE & WETZEL 2008)

Stratton et al (2001:319) locate their study against the background of

a growing body of evidence indicating that a substantial fraction of students who withdraw during their first year actually return to some institution of higher education shortly thereafter. **By failing to distinguish between long-term dropouts and short-term stopouts, researchers may incorrectly identify the factors associated with true dropout behavior.**

²⁸ For a full discussion of the application of logistic regression analysis, see Cabrera (1994). In this chapter he also compares ordinary least square (OLS) with logistic analysis.

Our goal is to determine whether the factors associated with stopout behavior are statistically different from the factors associated with dropout behavior and to ascertain whether treating these two groups as one may lead to misleading statistical results and thus to inaccurate targeting of the population truly at-risk for dropping out when designing programs to reduce dropout rates (emphasis added).

These authors identify three outcomes which they describe as follows (Stratton et al 2001:320):

We focus on the first year of enrolment because this is the period during which most attrition occurs. In particular, we identify students who are enrolled continuously throughout their first year and begin their second year of college (“continuous enrolment”), students who withdraw by the start of their second year and are not observed returning for over a year (“dropouts”), and students who withdraw by the start of their second year but return within 1 year (‘stopouts’).

These authors excluded non-degree seeking students as well as part-time students because of the real possibility that the interpretation of the results would be contaminated. They define enrolment, dropout and stopout as follows (Stratton et al 2001:322):

- **Continuous enrolment** is defined as enrolment for all non-summer terms up to and including the first term of the second year.
- **Dropout behavior** is defined as non-enrolment for a period of over 1 year commencing during the period used to define continuous enrolment. By this definition, a student classified as a dropout will not be enrolled in the first term of their second year of college.
- Individuals are classified as **stopouts** if they leave but then return after no more than a 1-year absence. Some of these students will be enrolled during the first term of their second year of college; some will not.

This categorisation of three distinct elements of student throughput “does a good job capturing the conceptual difference between stopout and dropout behaviour” (Stratton et al 2001:322). These authors do acknowledge that “our classification scheme may overstate dropout relative to stopout behavior, but the noisier this classification is the less likely we are to find evidence that stopout and dropout are distinct behaviors” (Stratton et al 2001:323). The variables Stratton et al (2001:324) investigated are presented in the following table (table 4):

Table 4: Variable definitions as used by Stratton et al (2001:324-325)

Demographic characteristics	
Female	1 If female
Black	1 If black
Nonwhite/nonblack	1 If neither white nor black
Hispanic	1 If Hispanic. Note that ethnicity and race are identified separately
Parental education	
	Dummy variables identifying the highest level of education completed by a parent. Use parental reply where available, else respondent’s
Less than high school	1 If most educated parent did not complete high school

High school	1 If most educated parent completed high school, no more
Some college	1 If most educated parent took some college courses
College +	1 If most educated parent completed college or more. Base case
Missing	1 If have no information on parental education from either parent or respondent
Household income	
Independent	1 If student declares him/herself to be financially independent
Parental income < \$20K	1 If student is dependent and annual parental income is <\$20,000
Parental income \$20–30K	1 If student is dependent and annual parental income is \$20–30,000
Parental income \$30–50K	1 If student is dependent and annual parental income is \$30–50,000. Base case
Parental income >\$50K	1 If student is dependent and annual parental income is >\$50,000
Timing	
First attended in the fall term	1 If first attend during the fall term
Immediate matriculation	1 If individual matriculated immediately after completing high school
Male age–16	Age–16 for men
Female age–16	Age–16 for women
Grades	
	First year GPA with preference given to institution-reported grades
Low GPA	Institution reports GPA 2.0 or individual reports “Mostly C’s” or worse
Self-reported average GPA	Individual reports “Mostly B’s” or “B’s and C’s”. No institution report available
Institution-reported average GPA	Institution reports GPA between 2.0 and 3.25. Base case
High GPA	Institution reports GPA43.25 or individual reports “A’s and B’s” or better
Missing GPA	Neither institution nor individual reported first year grades
Family characteristics	
Current marital status	Measured at the start of the first term enrolled

Married man	1 If respondent is a married man
Married woman	1 If respondent is a married woman
Sep/div/wid woman	1 If respondent is a separated, divorced, or widowed woman
Change in marital status	Measured at the end of the term that begins one calendar year after first enrolled
Woman who marries	1 If respondent is a woman who marries
Woman whose marriage ends	1 If respondent is a woman whose marriage ends
Current parental status	Measured before initial enrollment
Male parent, child <age 6	1 If the respondent is a man with a child born after 1981
Female parent, child <age 6	1 If the respondent is a woman with a child born after 1981
Change in parental status	Measured 18 months after first enrolled
Child born to man	1 If the respondent is a man and a child enters his household
Child born to woman	1 If the respondent is a woman and a child enters her household
Institutional characteristics	For first school attended
Public school	1 If institution is public, 0 if private
Two year school	1 If institution is a 2 year school, 0 if a 4 year school
Lives within 10 miles	1 If respondent lives within 10 miles of institution
Lives 10–100 miles away	1 If respondent lives 10–100 miles away from institution. Base case
Lives further than 100 miles	1 If respondent lives more than 100 miles away from institution
Financial aid variables	Dummy variables identifying the type of financial aid the individual received in his/her first year
Received a grant	1 If respondent received a grant
Received a loan	1 If respondent received a loan
Received work-study	1 If respondent received work-study aid
Received employer provided aid	1 If respondent received employer provided aid
Received other aid	1 If respondent received other aid
Economic conditions	
1990 Unemployment rate	1990 Unemployment rate in respondent's home state

Expected earnings (in 000s)	1990 Census data reporting earnings of a high school graduate working full-time, matched to the respondent's gender, race/ethnicity, and age
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Significant for the development of Unisa's conceptual model, the following findings of Stratton et al (2001:325-330) may be crucial pointers:

- Analysis of the results indicates that some factors are not significant determinants of enrollment outcome. Although some coefficients are individually statistically significant, neither the set of demographic characteristics (p-value 0.21), nor the set of income variables (p-value 0.22), nor the set of economic variables (p-value 0.25) are found to be jointly significantly associated with enrollment outcome. Some of these factors (like income) may influence the decision to enroll in college in the first place, but not have much impact on subsequent enrollment decisions.
- **Parental education**, for example, is a significant determinant of non-enrollment (p-value 0.0015) but has no differential effect by type of interruption (p-value 0.61). Students whose parents have completed college (the base case) are significantly more likely to be continuously enrolled than to stop out or to drop out, as compared to students whose parents have less education.
- Those individuals attending a 2-year institution are also more likely to both stop out and drop out than those individuals attending a 4-year institution.
- As we hypothesized, a number of factors appear to be differentially associated with dropout and stopout behavior. One such factor is the timing of college entry which has a statistically different relation with stopout as compared to dropout behavior (p-value 0.0041). Older men are more likely than younger men to drop out rather than to continue, while age is not a significant factor in the dropout/continue decision for women, or in the stopout decision for either.
- Household characteristics at the time of matriculation also have a differential effect by type of interruption, though one qualified somewhat by the small numbers involved.
- **Current marital status** is more significantly correlated with stopout (p-value 0.0053) than with dropout (0.0382) behavior, but is significant in each comparison. **Married men** are significantly and substantially more likely to stop out rather than to enroll continuously, as compared to never married men. They are also significantly and substantially less likely to drop out than to stopout as compared to never married men. In a simple logit model of interruptions these effects cancel one another out and men's marital status appears unrelated to interruptions.
- **Married women** are also more likely to stop out than to enroll continuously as compared to never married women, but not significantly more likely to stop out than to drop out. Again in a simple logit model of interruptions these distinctions are lost and married women appear more likely to interrupt.
- **Parental status** variables are important, too. The presence of a young child leaves women more likely to drop out than to stop out and men more likely to enroll continuously than to drop out, as compared to those without children ... Having a newborn substantially increases the odds with which men will interrupt their enrollment, with dropout increasing relatively more than stopout. Women who become mothers are also more likely to drop out than to stop out or to remain enrolled, but there is no significant difference in the probability that they will stop out relative to remain enrolled than women who do not become mothers.
- Finally, the impact of **financial aid** receipt on stopout and dropout is different. This finding should be of particular interest to policy makers. Receiving financial aid does not help differentiate between short-term stopout and continuous enrollment (p-value 0.45). However, the probability of dropping out, relative to stopping out or to remaining continuously enrolled, is higher for those receiving loans and lower for those receiving work-study aid as compared to those receiving no aid.

Stratton et al (2001:330) conclude that their multinomial logit model has proved that

the enrollment decision students face is far more complex than the persist/dropout decision typically modeled in the attrition literature. This paper takes a significant step in modeling that behavior: first, by showing that a substantial fraction of withdrawals are temporary and, second, by demonstrating that the factors associated with temporary withdrawals are not the same as those associated with permanent withdrawals. By differentiating between stopouts and dropouts, institutions of higher education can design more effective intervention plans that address each of these two types of interruptions and so increase graduation rates as well as the pace of degree progress, and hence the education-based benefits accruing to both individuals and society.

4.3.2.10 A STRUCTURAL MODEL TO UNDERSTAND THE ROLE OF FINANCES IN THE PERSISTENCE PROCESS (CABRERA, NORA & CASTANEDA 1992)

Cabrera et al (1992) situate their research against different approaches to explain student persistence. The first approach is to rely on organisational and sociological theories “to clarify processes linking student-related factors with institutional ones” (like the models proposed by Tinto and Bean). Cabrera et al (1992:571) feel that “these theoretical perspectives and supporting research have typically failed to examine or to test the integrated role of financial factors in the persistence process”. The other parallel line of research is represented by studies that “rely mainly on price-response theories and on theories of targeted subsidies” (Cabrera et al 1992:572). Cabrera et al (1992:572) furthermore propose that most of the studies on the role finances play in student throughput are “impact-oriented”. These studies

emphasise the effect of financial aid in persistence rather than the overall underlying structural patterns involving this variable with other factors. These impact-oriented studies typically include measures of precollege motivational factors, precollege academic ability and achievement, demographic factors, students' socioeconomic status, and college performance in order to control for background or precollege sources of variance when assessing whether financial aid or combinations of student aid packages increase persistence.

Against this background Cabrera et al (1992:572) bemoan the fact that “[l]ittle attention has been paid to the underlying process linking these pre-college variables both with financial aid ... and with intellectual and nonintellectual factors related to college experiences”. Cabrera et al (1992:572) therefore describe the purpose of their research as to “explore the role of finances in a college persistence model theoretically based on conceptual frameworks as advanced by Tinto and Bean”.

Specifically, the paper explores the direct and indirect effects of finances on persistence in the context of such important noneconomic variables as significant others' influence, precollege academic achievement, academic and social integration, goal and institutional commitments, and intent to persist Cabrera et al (1992:572).

Important for the purposes of developing Unisa's conceptual model of student throughput is the remark made by Cabrera et al (1992:573) that the “usefulness of the student integration model as a framework to explore the effect of finances on college persistence is limited”. Cabrera et al therefore propose a hypothetical model to test the influence of finances in student persistence (figure 11):

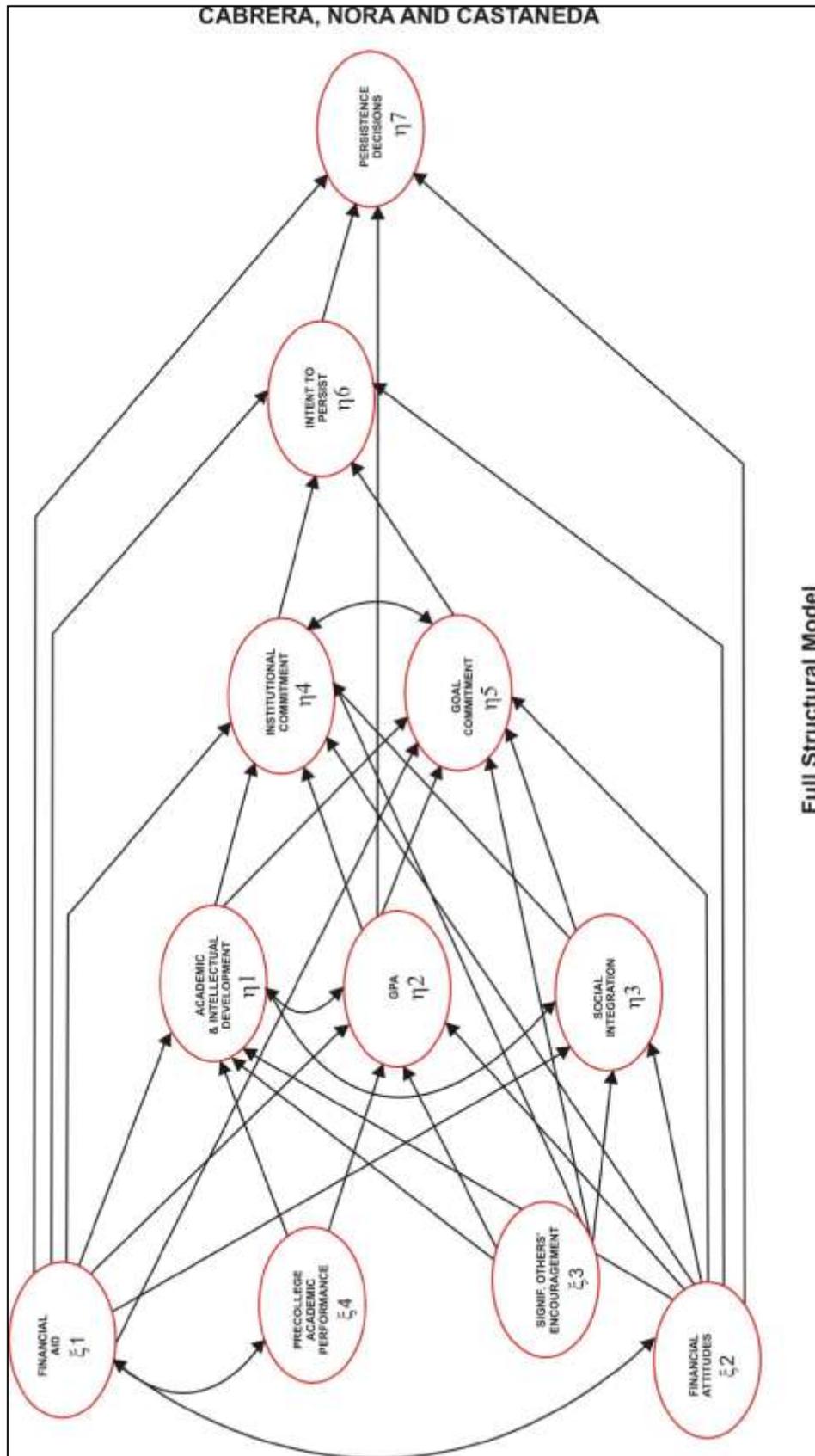


Figure 11: The hypothetical structural model proposed by Cabrera et al (1992:576)

Describing the proposed structural model, Cabrera et al (1992:577) state that

[u]nlike previous verifications of the student integration model, the present structural model regards academic integration as comprised of two separate yet intercorrelated dimensions: a cognitive component (or variable) consisting of the student's academic achievement, and a noncognitive component (or variable) reflecting the academic and intellectual development of the student.

The model posits that finances have a “direct effect on persistence decisions while affecting students’ social and intellectual experiences at the institution” and that “students' concerns with finances, along with other external factors to the institution, can affect their academic integration by increasing anxieties associated with the need of securing resources to finance their college education, and by limiting the amount of time and energy spent on academically related activities” (Cabrera et al 1992:578).

For the sake of the development of Unisa’s conceptual model it may be significant to take note of the following findings by Cabrera et al (1992:583-590).

- With regard to academic integration it was found that “[o]nly finance attitudes ($\beta = .245$), significant others ($\beta = .147$), and high school performance ($\beta = .164$) exerted significant direct effects on academic and intellectual development. Although it was believed that the awarding of financial aid would have positive effects on the noncognitive component of academic integration, no support was found for this hypothesis. As previously stated, however, the attitudinal component of finances--satisfaction with financial support received—was found to exert a significant direct effect on the noncognitive component of academic integration. The most important variable affecting the academic and intellectual development of the student was satisfaction with financial support, followed by precollege academic performance and encouragement received from significant others”.
- With regard to social integration it was found that “[b]oth financial aid and support from significant others were found to have significant direct effects on the students' socialization process ($\beta = .188$ and $.119$, respectively). No support was found for the presumed effect of finance attitudes on social integration”.
- It is important to not only take into account the actual awarding of financial aid but also “attitudes that reflect students' assessments of the extent to which financial needs are being met not only from financial aid but from other sources as well (i.e., family, jobs, friends). Thus, it presents a more comprehensive perspective of student finances within the persistence process”.
- The role financial aid plays in facilitating students’ social interaction is described as follows:

It is believed that students who have received a financial aid award need not secure employment or, if already employed, spend additional time and effort in their present jobs. In other words, financial aid may provide recipients with enough freedom to engage in social activities and to become fully integrated into the social realm of the institution. Moreover, removing anxieties, time, and effort associated with securing additional funds to finance their education, student aid recipients may have not only found it easier to interact with peers and participate in campus activities but may have also found it easier to engage in academic activities that enhanced their academic performance (GPA).

Cabrera et al (1992:589) close their research findings by remarking as follows:

The significant effect of financial aid on the student's intent to persist may underscore two factors associated with financial aid. On the one hand, financial aid may have reduced the

student's burden of meeting financial costs associated with attending college, therefore decreasing the attractiveness of alternative activities such as transferring to another institution or entering into the labor force. On the other hand, the student may have viewed the institution as instrumental in securing future financial aid funds, and thereby increasing a student's commitment toward maintaining membership at his or her institution.

4.3.2.11 A PSYCHOLOGICAL MODEL OF COLLEGE STUDENT RETENTION (BEAN & EATON 2000)

Bean and Eaton (2000:55) propose that there is a difference between voluntary and involuntary withdrawal, where the latter refers to students who would like to remain registered but for a number of reasons have to deregister. These authors warn, however, that the “model would work least well for students who lack the abilities or skills required for college academic work” (Bean & Eaton 2000:55). In explaining their model they state that it falls into the category of “psychological models that are intended to explain behaviour, that indicate that a given behaviour is a choice”, and that the model assumes that “people are motivated to make choices that lead to or away from any given behaviour” (Bean & Eaton 2000:56).

Bean and Eaton summarise (2000:58) their model as follows:

Students enter college with a complex array of personal characteristics. As they interact within the institutional environment several psychological processes take place that, for the successful student, result in positive self-efficacy, reduced stress, increased efficacy, and internal locus of control. Each of these processes increases a student's scholarly motivation. These internal processes are reciprocal and iterative with continuous feedback and adjustment ... these processes in turn lead to academic and social integration, institutional fit and loyalty, intent to persist, and to the behaviour in question, persistence itself.

The following figure (figure 12) illustrates Bean and Eaton's psychological model of student retention:

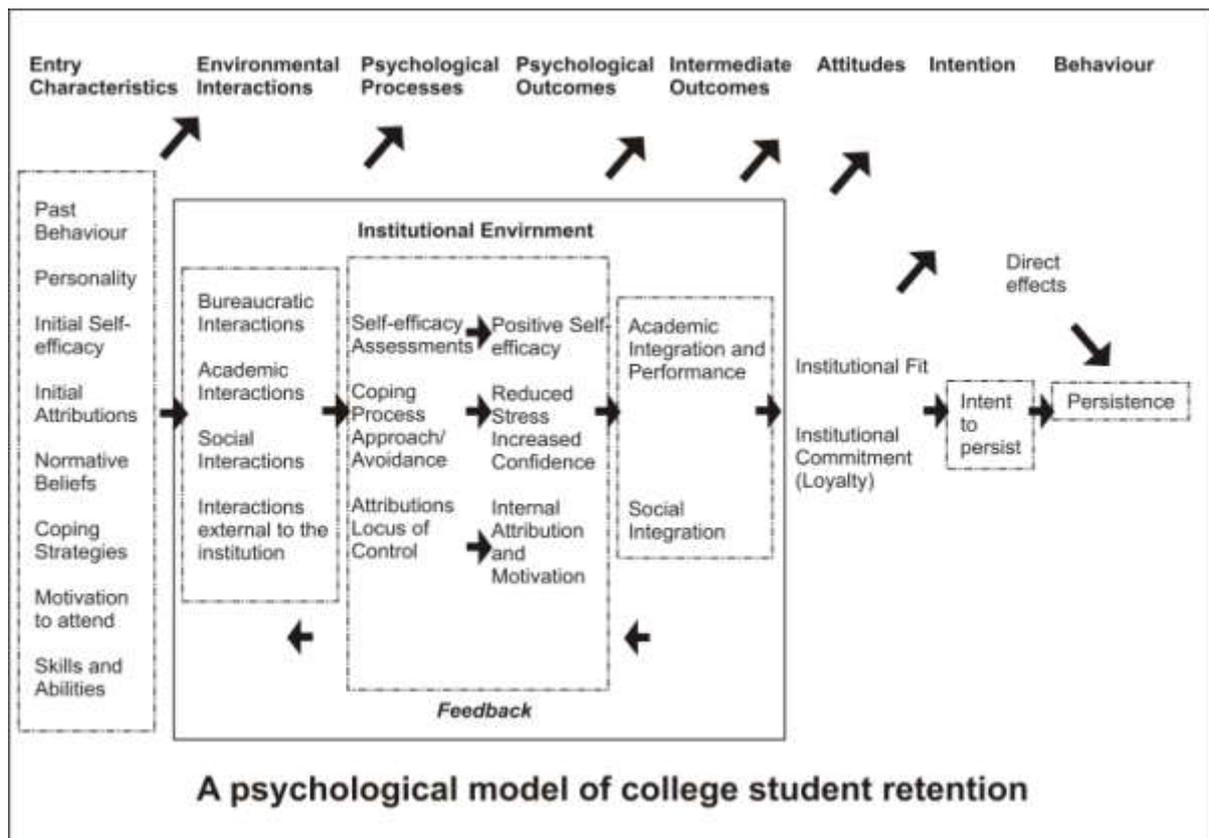


Figure 12: Bean and Eaton's psychological model (2000:57) of college student retention

In conclusion, Bean and Eaton (2000:58) indicate a number of implications that need to be resolved in the application of this model:

- Find and develop evidence of the concepts in the model.
- Find evidence of the relationships between these concepts, measure the strength of the relationships in order to establish whether these behaviours and beliefs are involved in reshaping attribution, self efficacy and coping behaviour.

Bean and Eaton (2000:58) claim that "students are psychological beings and that collective issues of sociology play a secondary role". These authors further warn that "individuals from different cultures or of different genders perceive the world differently" (Bean & Eaton 2000:59). This necessitates that researchers examine "which of these psychological processes seems most important for any demographic group to be studied" and to identify particular factors in each of the elements of the model (Bean & Eaton 2000:59).

4.3.2.12 A COMPREHENSIVE SOCIAL/ECOLOGICAL MODEL (BAIRD 2000)

In introducing his proposal for an ecological model, Baird (2000:62) points to several shortcomings of the Tinto model, such as the fact that it does not include all possible variables, and the fact that the "model is often tested in secondary analyses of data sets that were developed for other purposes" (Baird 2000:62). The environmental/ecological model that Baird proposes includes four major domains: the physical setting, organisational factors, the human aggregate and social climate (Baird 2000:65). The following figure (figure 13) illustrates Baird's model:

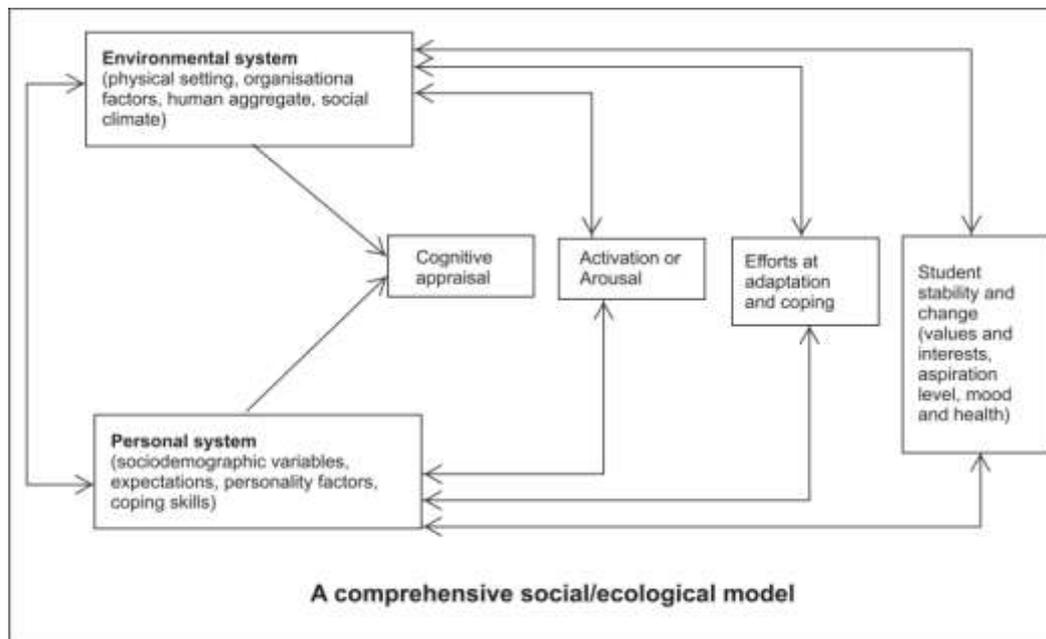


Figure 13: Baird's comprehensive social/ecological model (Baird 2000:64)

While the environmental and personal systems speak for themselves, the other elements in the model need explanation.

Cognitive appraisal "is a mediating factor by which students perceive their environments as being potentially threatening, beneficent, or irrelevant (primary appraisal) and their perceptions of their available coping responses" (Baird 2000:65).

Activation or arousal "is the result of appraising the environment as requiring a response. This, in turn, leads to efforts at coping and adaptation, which may involve attempts to change the environmental system or the personal system" (Baird 2000:65).

Baird summarises (2000:67) the model's most important aspect is its emphasis "on the central role of students' appraisals of their environments". The role of students' appraisal plays an even more significant role in the experiences of minority students. Negative climates result in alienation and an increase in dropout and failure (Baird 2000:71).

Baird concludes (2000:75) by stating that Tinto's model should not be abandoned, "but that we should use the theoretical debates in these analogous areas to sharpen and reconsider meanings we attach to the conceptions and develop more appropriate measures".

4.3.2.13 A SOCIAL REPRODUCTION MODEL (BERGER 2000)

The foundation of Berger's social reproduction model is the work of Bourdieu. Berger (2000:95) states that "Bourdieu's work is appealing to many social scientists because it provides a means for helping to explain social inequities, and it is the hope of some that Bourdieu's theory might help further inform the battle against social inequities". Berger (2000:96) proposes that social inequities are a potentially "important factor to consider when examining the undergraduate persistence process".

Central to this model is the notion of students' access to capital. Capital in Bourdieu's sense includes more than *economic* capital resources, such as cultural capital. Cultural capital includes "informal interpersonal skills, habitus, manners, linguistics, educational credentials, and lifestyle preferences" (Berger 2000:97). Bourdieu later included other forms of capital, for example artistic and

credentialled, but Berger quotes DiMaggio (1979, in Berger 2000:98), who says that “[a]s the number of capital increases, the metaphorical currency undergoes inflation and its value declines accordingly”. Berger therefore suggests that his model focuses on the two historically major forms of capital, namely economic and cultural, with the emphasis on the latter.

The notion of cultural capital arose from the failure to explain social stratification by just focusing on economic capital. “Cultural capital is a symbolic, rather than material, resource. It has no intrinsic value, other than the ways in which it can be converted, manipulated, and invested in order to secure other highly valued and scarce resources, including economic capital” (Berger 2000:98). Berger (2000:98) further indicates that the differentiation between “high” and “low” does not indicate superior or better, but refers to the value typically attached in particular societies to “certain kinds of symbolic resources, such as cultural capital”.

Berger then proposes (following Bourdieu) that individuals with access to similar types and amounts of capital share common habitus. Berger (2000:99) quotes Bourdieu’s description of habitus as a “system of lasting, transposable dispositions which, integrating past experiences, functions at every moment as a *matrix of perceptions, appreciations, and actions*” (italics in the original).

In other words, people who live similar lifestyles because of their common level of access to capital develop a shared worldview as a result of common experiences and interaction. This habitus fosters a common representation of the world in a class-specific manner at a cognitive, taken-for-granted level. Thus certain preferences and tendencies become routinised as part of an individual’s worldview (Berger 2000:99).

Each academic discipline or institution of learning develops its own logic and stakes, “where capital is employed so that agents, individual (e.g., students) or collective (e.g., educational institutions), can protect or enhance their existing resources” (Berger 2000:99). Schools and institutions of higher learning not only legitimise certain forms of knowledge and being, but also perpetuate or reproduce it. “Given that cultural capital tends to be cumulative, students with higher initial levels of cultural capital (acquired from primary socialization in the family) tend to be able to use the initial familial investment of cultural capital to gain further cultural wealth through the secondary socialisation process in the schools” (Berger 2000:99).

As students choose institutions of higher learning based on their own cultural capital as well as the perceived cultural capital of the institution, their access is defined by their sense of “entitlement”. Students with higher cultural capital will feel more entitled to demand value for their contributions, while students with lower cultural capital will demand less and will feel entitled to less. Berger follows Bourdieu to propose that “educational systems [are] ... the primary venues through which families and individuals seek to optimise capital resources” (Berger 2000:101). These institutions then assume the role of “intermediary agents through which individuals optimise existing capital in order to accumulate greater shares of economic and cultural capital later in life” (Berger 2000:101). Referring to Tinto’s model, Berger (2000:110) states that the

[t]hree campus subsystems – academic, social, and organisational – could be thought of as sources of both challenge and support for students. The more congruent a student’s habitus is with the organisational habitus as it is manifested through these subsystems, the more apt the student is to perceive them as a source of support. In contrast, less congruence might lead to a perception of the subsystems as too challenging.

Berger (2000:111) elaborates that students’ past accumulation of cultural capital

shape[s] their habitus, which in turn are major determinants of students’ expected entitlements regarding postsecondary education ... At the same time colleges also have certain characteristics, including their own access to capital resources that lead to their

organisational habitus. The organisational habitus influences admission processes and decisions. Hence, the combination of individual student college choice and organisational student selection determines the types of students in certain concentrations [that] attend each institution

The implications for developing a conceptual model regarding student throughput are highlighted by Berger (2000:111), who writes that students' "chances of persistence are affected by the extent to which their habitus and related beliefs of entitlement are congruent with the dominant organisational habitus". Berger concludes (2000:113-120) with a number of propositions, including the following:

Proposition 1: Institutions with higher levels of cultural capital will have the highest retention rates.

Proposition 2: Students with higher levels of cultural capital are more likely to persist, across all types of institutions, than are students with less access to cultural capital.

Proposition 3: Students with higher levels of cultural capital are most likely to persist at institutions with correspondingly high levels of organisational cultural capital.

Proposition 3a: Students with higher levels of cultural capital are more likely to become integrated into the academic systems of institutions with correspondingly high levels of organisational capital.

Proposition 3b: Students with higher levels of cultural capital are more likely to become integrated into the social systems of institutions with correspondingly high levels of organisational cultural capital.

Proposition 3c: Students with higher levels of cultural capital are more likely to become integrated into the organisational systems of institutions with correspondingly high levels of organisational cultural capital.

Proposition 3d: Students with access to lower levels of cultural capital are most likely to persist at institutions with correspondingly low levels of organisational capital.

We will now turn to models explaining non-traditional educational settings and models describing student throughput in distance education.

4.3.3 MODELS IN NON-TRADITIONAL SETTINGS AND DISTANCE EDUCATION

In the literature on non-residential universities, there are a number of studies dealing with the throughput of "non-traditional students" (eg Laing & Robinson 2003; Metzner & Bean 1987) and models/theories dealing specifically with throughput in a distance education environment (eg Kember 1989; Simpson 2003).

4.3.3.1 THROUGHPUT IN THE CONTEXT OF *NON-TRADITIONAL* STUDENTS (METZNER & BEAN 1987)

Metzner and Bean (1987:15) indicate that most studies on student attrition deal with traditional students who are under age 25, enrolled full time and residing at their tertiary institution. Metzner and Bean (1987:16) describe their use of the concept "non-traditional" as "older, part-time, and commuter undergraduate students". As such these students are different from the focus of this draft paper, namely students in a distinctly distance education setting. Although the focus of their

research is different from ours, a number of their proposals and findings may have significance for Unisa's conceptual model.

Metzner and Bean (1987:17) propose that dropout decisions for non-traditional students are based on four sets of variables:

- students with poor academic performance
- intent to leave (which should be influenced primarily by psychological factors)
- background and defining variables – mainly high school performance and educational goals
- environmental variables

They found that the best predictors of dropout were "GPA and intent to leave, followed by a background variable, hours enrolled" (Metzner & Bean 1987:22). They state that intent to leave "was one of the two strongest predictors of dropout. Intent was best predicted by the psychological outcome variables, utility and satisfaction" (Metzner & Bean 1987:25). They describe utility as reflecting "students' interest in the practical outcomes of their education at the university such as better employment opportunities and job-related skills" (Metzner & Bean 1987:27). Seven variables influenced utility, namely major and career certainty, outside encouragement, course availability, educational goals, academic advising, average study hours and hours enrolled.

Metzner and Bean (1987:27) describe satisfaction as students being satisfied with their role as a student. The variables influencing satisfaction were age, educational goals, course availability, outside encouragement, study skills and advising. Another surprising finding was the fact that GPA was the *second* best predictor of college grades for non-traditional students, while GPA was the best predictor for traditional students. In a finding that differs substantially from the Tinto and Spady models, Metzner and Bean (1987:25) found that "social integration variables had no significant effects at all on dropout". In conclusion Metzner and Bean propose that because non-traditional students are primarily concerned with an institution's academic offerings, social integration does not play a significant role in student persistence as it does with residential or traditional students.

4.3.3.2 THROUGHPUT IN THE CONTEXT OF *NON-TRADITIONAL* STUDENTS (KEMBER, LEE & LI 2001)

In another study on retention in higher education, Kember et al (2001) investigate the impact of a sense of belonging in part-time students. This research reports on interviews with 53 students in the context of the Open University of Hong Kong (OUHK). Of the 53 students, 35 were novice enrolments, while 18 were postgraduate returners. These part-time students attended classes in the evening or at weekends and these classes typically lasted two or three hours (Kember et al 2001:328). The theoretical foundation of this study was the concept of integration in the models proposed by Spady and Tinto. This study explored to what extent students experienced a sense of integration with the institution. The interview questions were phrased as follows (Kember et al 2001:328):

- How would you describe your relationship with teaching staff?
- How would you describe your relationship with your classmates?
- How do you feel being a part-time student in your university?
- Have you participated in any activities of your university?
- Do you feel that belong to your university?
- What can the university do to improve your sense of belonging?

The study proposes several ways in which the institution can increase part-time students' sense of belonging, for example

- encourage class discussion
- keep students as a cohort
- encourage teaching staff to interact with students
- provide good quality teaching
- the importance of initial contact
- enrol in department activities
- allow greater accessibility to resources

Kember et al (2001:341) conclude that “the learning environment was significantly better in several ways for students who had developed a sense of belonging than for those who had not”. In another study Kember and Leung (2004) investigate the relationship between the employment of coping mechanisms and a sense of belonging for part-time students.

4.3.3.3 A LONGITUDINAL-PROCESS MODEL OF DROPOUT FROM *DISTANCE EDUCATION* (KEMBER 1989)

While the previous two models focused on non-traditional students, the model proposed by Kember (1989) is aimed specifically at distance education. It is, as far as we could assess, currently the only conceptual model on student throughput in a distance education environment.

At the start of his article Kember (1989:278) points out that his proposal for a model is based on models already in use in various settings, but that it is his contention “that these models are not directly applicable to distance education because of the characteristics of that form of education”. Kember quotes Kerlinger, who defines a theory as “a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relationships among variables with the purpose of explaining and predicting the phenomena” (in Kember 1989:279). A model, according to Kember (1989:279), should be judged by its usefulness.

A model of the attrition process should contain sufficient constructs to explain what is undoubtedly a complex process and yet be sufficiently simple to be understandable and usable. It should be able to explain collected descriptive data, and it should provide a framework against which predictions can be hazarded and judgements made about potential interventions.

After discussing some earlier attempts to model student attrition in a distance education environment, Kember states that “there is currently [1989] no adequate conceptual model of dropout from distance education” (Kember 1989:281). Kember specifically addresses the fact that some authors’ research on non-traditional students (eg Bean & Metzner 1985) is not really applicable owing to their definition of “non-traditional”. These studies focus on students who do not live on campus but do attend face-to-face classes. These students are therefore not the same as distance education students. In the light of no appropriate model in distance education Kember (1989:283) proposes a longitudinal-process model of dropout.

Kember (1989:284) prefers longitudinal models, although he acknowledges that they often are more complex than other models. With regard to using models that were not developed specifically for the distance education environment (eg Tinto 1970), Kember states that the “Tinto model was derived for full-time education by face-to-face teaching of students who recently left school and stresses the importance of social and intellectual involvement within an institution upon student behaviour” (Kember 1989:284). He proposes that the background variables in Tinto’s model be broadened “to be appropriate to distance education” (Kember 1989:285). Kember adjusts Tinto’s model and proposes the following model specifically for distance education (figure 14):

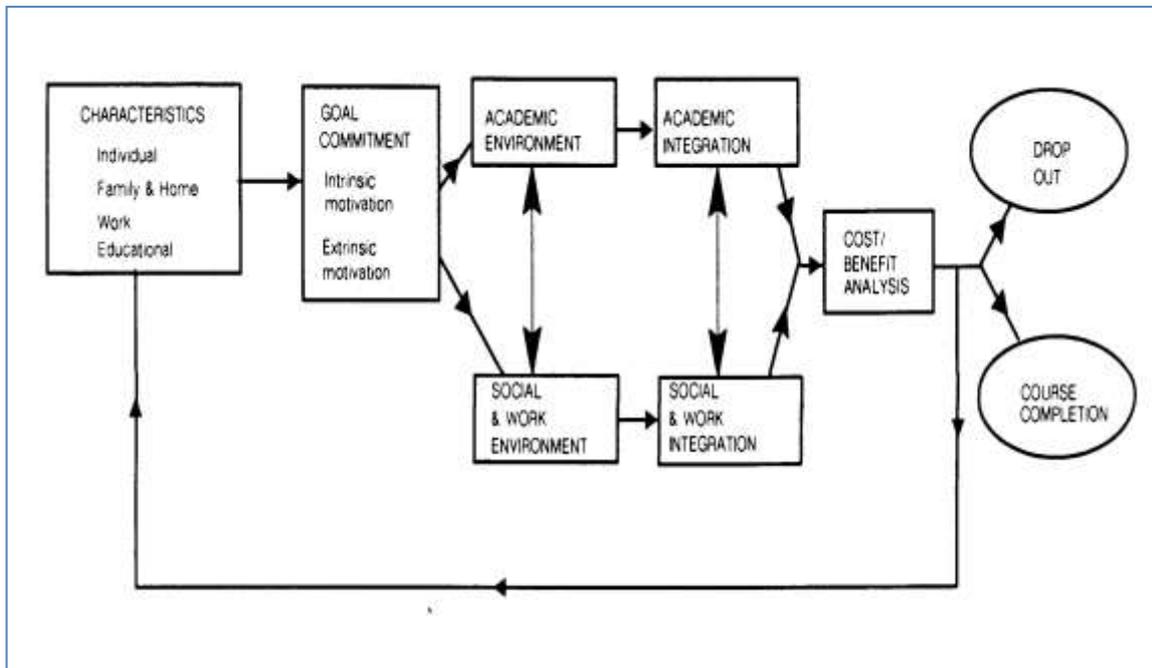


Figure 14: Kember's proposed model of dropout from distance education (1989)

We will now continue to explore the different aspects of Kember's model, looking for pointers towards developing Unisa's conceptual model.

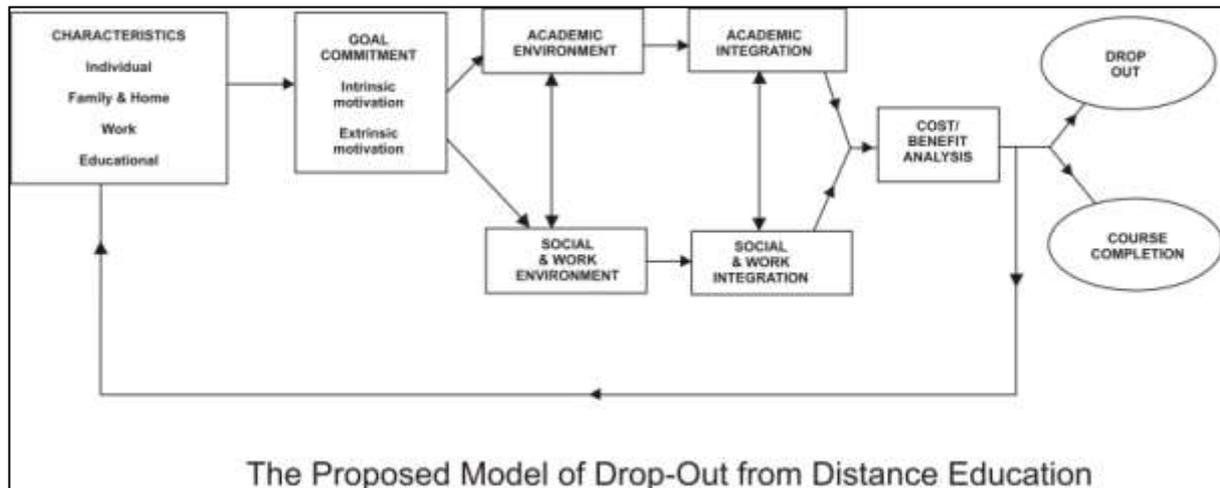
Characteristics

There is enough research, according to Kember (1989:286), to indicate that these variables impact on student retention. Although the impact of age, gender and race are contentious and very contextual, Kember's model does allow these factors to be taken into account. Kember (1989:287) cautions, however, that when mature students are involved, "the link between school results and college or university performance is even more tenuous. Wide-spread existence of mature entry programs indicates that mature students, without the formal qualifications required of school leavers, can and do succeed in tertiary study".

Goal commitment

In this model, goal commitment focuses on an intrinsic and extrinsic component. In a study of full-time students it was found that "higher expectations for future occupational status correlated with high attainment, once ability was controlled" (Kember 1989:288). Kember, however, also cautions that unrealistic expectations may actually contribute to dropout (Kember 1989:288). He also points out that a significant percentage of distance education students register not with the intention of completing a qualification, but rather to only do a certain number of courses. The impact of these students on cohort studies investigating throughput must still be determined.²⁹

²⁹ How the new HEQF will impact on the number of these students must also still be determined. In the past students could leave earlier and be accredited with a lower exit-level qualification. In the new HEQF this is longer allowed. Students can no longer register for a specific qualification and exit earlier with another qualification.



Kember (1989:288) interestingly also points out how the self-directedness of adult learners may often create conflict with the structured nature of distance education courses.³⁰ He also warns of the conflict that may arise when students' rote or surface learning approaches clash with courses designed to facilitate deep learning (Kember 1989:290).

Academic aspects

With regard to the academic aspects of studying through distance education, Kember (1989:293) highlights the importance of "fit" – how well students' needs, expectations and aspirations fit with what they get in their course packages.

*Cost/benefit analysis*³¹

Kember (1989:295) points out that

[t]he variables incorporated in the model will not remain constant during a student's academic career. Background characteristics will alter as the, often quite lengthy, course proceeds. Goal commitments will vary during this time, often being strengthened towards the end as completion comes into view. The degree of both academic and social integration will be influenced by changes in characteristics, development of goal commitment, the nature of course, support from the institution, and events and attitudes in the work, family, and social environments.

With regard to the testing of his model, Kember cautions that direct and indirect impacts of the different variables should be investigated. He suggests using path analysis as an appropriate technique because it "permits the calculation of both direct and indirect effects for each of the independent variables. It is then possible to identify those variables which have the greatest direct and indirect combined effect on the dependent variable" (Kember 1989:296).

³⁰ This may impact even more severely on Unisa's mature student population in a highly structured and managed 14-week semester system.

³¹ Although Kember includes this element towards the end of his model, I suspect it is actually present at every stage/phase of the model. At each stage of the process students determine (whether consciously or not) whether the cost of studying still "fits" their expectations, needs and aspirations.

4.3.3.4 CATEGORIES OF PERSISTENCE BARRIERS BY MORGAN AND TAM (1999)

Although Morgan and Tam do not propose a model, their categories of persistence barriers should be considered in the development of a conceptual model. In the context of distance education, Morgan and Tam (1999:99) identify four categories of persistence barriers, namely situational, institutional, dispositional and epistemological barriers. They describe each of these categories as follows:

Situational - arise from a student's particular life circumstances, such as changed employment situation, changed marital status or having a baby.

Institutional – difficulties students experience with the institution, such as admission requirements, course pacing, and limited support services.

Dispositional – personal problems that impact on the student's persistence behaviour, such as their attitudes, confidence, learning styles and motivation.

Epistemological – impediments caused by disciplinary content or else the relative perceived difficulty of that content.

The following table (table 5) illustrates the application of these four categories to persisters and non-persisters:

Table 5: Four categories of persisters and non-persisters

Symbol keys:	
<ul style="list-style-type: none"> * mentioned only by non-persisters ◆ common to both persisters and non-persisters ■ mentioned only by persisters 	
<p style="text-align: center;">Situational</p> <ul style="list-style-type: none"> * poor family support * money problems ◆ lack of free time ◆ change in circumstances ◆ took more time than expected ◆ study not related to job ■ problem with study environment 	<p style="text-align: center;">Institutional</p> <ul style="list-style-type: none"> ◆ problems with course schedule and pacing ◆ learning materials arrived late ◆ insufficient feedback on assignments ◆ insufficient/unsatisfactory communication with academics ◆ course focus and expectations not clear ◆ missed contact with other students ◆ inflexible course structure ◆ course content was duplicated ◆ course content was wrong/outdated ◆ difficulty with residential schools ◆ problems with additional resources ◆ unit design and quality issues ■ problems getting academic to call back ■ bureaucratic bungling ■ confusing changes to course
<p style="text-align: center;">Dispositional</p> <ul style="list-style-type: none"> * personal study problems ■ unclear goals ■ time management problems 	<p style="text-align: center;">Epistemological</p> <ul style="list-style-type: none"> ◆ difficult content/discipline mismatch ◆ course not hands-on enough ◆ course focus lacked personal relevance or interest * mismatch in assessment requirements * course too management oriented (note: the course is marketed to prospective students as management focused) * units offered were not those desired * lacked prerequisite knowledge

(Morgan & Tam 1999) From this table (table 5) populated by Morgan and Tam, the factors only mentioned by the non-persisters are as follows:

- * poor family support
- * money problems
- * personal study problems
- * mismatch in assessment requirements

* course too management oriented (note: the course is marketed to prospective students as management focused)

* units offered were not those desired

* lacked prerequisite knowledge

Morgan and Tam (1999:105) warn that the four categories are interrelated and that no “single factor can be attributable to student withdrawal or non-persistence. Rather it is the interaction of numerous factors – situational, institutional, dispositional and epistemological – that produces the outcome of completing or not completing the course”. In conclusion Morgan and Tam (1999:105) state that epistemological and institutional problems can be addressed by the institution and department offering the specific courses. “Only a slight tip in the balance towards a more positive experience may be dramatic in its effect on the persisting behaviour” of students who contemplate dropping out. Morgan and Tam (1999:106) quote Woodley, who states that non-persistence is “a multi-causal problem which requires multiple partial solutions”.

4.3.3.5 A BRIEF OVERVIEW OF OTHER STUDIES REGARDING RETENTION AND THROUGHPUT IN DISTANCE EDUCATION

Shin (2003:71) explores transactional presence (TP) as a critical predictor of success. She describes it as

...the degree to which a distance student perceives the availability of, and connectedness with, people in his/her educational setting. “Availability” implies that what is needed or desired is obtainable upon request, involving the responsiveness of interpersonal relationships. “Connectedness” indicates the belief or feeling that a reciprocal relationship exists between two or more parties, involving an individual’s subjective judgment upon the extent of the engagement in relationships with others.

Shin’s hypothesis (2003:72) tested was that a distance education student’s perceptions of the TP of teachers, peers and educational institution significantly predict learning achievement, learning satisfaction and learning persistence. Her research was located in the context of the Korea National Open University (KNOU). Shin found that although institutional TP influenced students’ learning achievement, satisfaction and persistence, peer and teacher TP had no significant influence. Peer TP had an impact on satisfaction but not on achievement (Shin 2003:80).

Parker (1999) investigates variables that impact on student retention within the context of the Open Learning Institute in British Columbia. She combines quantitative as well as qualitative research methodologies to investigate the question: “Can locus of control, gender, number of distance education courses completed, age, financial assistance, and number of hours employed predict dropout from distance education course?” (Parker 1999, online). In this research she uses Rotter’s locus of control scale (in Parker 1999, online). “The locus is internal if a person perceives events to be contingent upon his or her own behavior; the locus is external when events are perceived to be contingent upon luck, fate, the control of others, the environment or anything else not under his/her control” (Marsh & Richards, 1986 in Parker 1999, online). Parker’s study (1999 online) found that locus of control and source of financial assistance “could predict nearly 85 percent of dropout from distance education”. Locus of control as a single variable was able to predict an accuracy of 80% using discriminant analysis (Parker 1999 online).

Kielty (2004) investigates whether students’ perceptions of corrective feedback affect retention in distance learning. Within the context of a community college in the southeastern United States, her

research focused on 135 students who enrolled for online courses through the college. Her research questions were (Kielty 2004:30):

RQ1. How are the students' perception of corrective feedback and student retention related?

RQ2. Are students who attend course orientation meetings more likely to complete the course?

RQ3. Are students who attend distance learning technical workshops more likely to complete the course?

RQ4. Are students who have taken other online classes more likely to complete the course?

RQ5. How are the students' perceived computer skills and student retention related?

Of the 135 students surveyed, only 50 responses were valid. A severe constraint was that students who dropped the course did not return the completed surveys, and therefore Kielty acknowledges (2004:37) that the sample does not accurately represent the population. She reports the results as follows (Kielty 2004:51):

No significant relationship was found between (a) attending course orientation and retention, (b) attending technical workshops and retention, (c) prior online experience and retention, and (d) students' perception of computer experience and retention. However, the data indicate a significant relationship between the students' perception of corrective feedback and retention.

4.4 A SELECTION OF RESEARCH FINDINGS REGARDING *INTERVENTIONS* ADDRESSING STUDENT RISK AND THROUGHPUT

The focus of this discussion document is not primarily to investigate the success of interventions attempting to influence student persistence and success. The following brief discussion on interventions does, however, provide an interesting picture of *some* of the current pointers regarding attempts to influence student throughput and success.

The following are examples of interventions directed at students that were identified as being at risk. Examples of such research include Parsons and Meyer (1990), and specifically in the Unisa context, Bohlmann and Pretorius (2002), Pretorius and Bohlmann (2003), Du Plessis, Müller and Prinsloo (2005), Müller, Du Plessis and Prinsloo (2007), Prinsloo, Müller and Du Plessis (2009) and Pretorius, Prinsloo and Uys (2009). Parsons and Meyer (1990:324) warn that often intervention programmes fail because of "inadequate conceptualisation of why students are 'at risk', and at worst, on an incorrect conceptualisation of the interplay of factors that are associated with academic success or failure".

4.4.1 THE RELATIONSHIP BETWEEN READING SKILLS IN ENGLISH AND THE SUCCESS IN ELEMENTARY MATHEMATICS (BOHLMANN & PRETORIUS 2002; PRETORIUS & BOHLMANN 2003)

The intervention reported on by Bohlmann and Pretorius (2002) and Pretorius and Bohlmann (2003) explores the impact of an intervention in enhancing students' *language* competency in the teaching of a bridging module in Mathematics. Bohlmann and Pretorius (2002: 196) say that the "conceptual complexity and problem solving nature of these disciplines make extensive demands on the reasoning, interpretive and strategic skills of students, especially when carried out in a language that is not the student's primary language". Their specific focus was to identify the impact of students'

reading ability on their comprehension and skills in mathematics (Bohlmann & Pretorius 2002:196). Their concern was made more urgent in the light of Unisa being a distance education institution relying on students' reading of texts to grow in their comprehension of specific fields. Bohlmann and Pretorius (2002:196) distinguish between decoding and comprehension and explain the difference and relationship between these two concepts as follows:

“Decoding” involves those aspects of reading activity whereby written signs and symbols are translated into language. “Comprehension” refers to the overall understanding process whereby meaning is assigned to the whole text. The interaction between decoding and comprehending in skilled readers happens rapidly and simultaneously. Most researchers and practitioners of reading agree that comprehension cannot effectively occur until decoding skills have been mastered (eg Perfetti 1988). However, skill in decoding does not necessarily imply skill in comprehension. Many readers may readily decode text but still have difficulty understanding what has just been decoded (Daneman 1991; Yuill & Oakhill 1991).

Reading mathematical texts requires a mathematics register, which implies dealing with complex and layered relationships requiring precision, conciseness and lack of ambiguity. These authors describe engaging with mathematical texts as follows (Bohlmann & Pretorius 2002:197):

Mathematics texts are also hierarchical and cumulative, in the sense that understanding each statement or proposition is necessary for understanding subsequent statements. If a particular step in a method, procedure or argument is misunderstood or overlooked, this has severe consequences for overall comprehension. Reading mathematics texts also requires integration of all the information in the text. A mathematics reader thus needs to interact with the text, be alert and attentive, be sensitive to comprehension failure as soon as it happens, and be capable of applying repair strategies when comprehension failure occurs. Reading rate adjustment and multiple readings are also necessary because of the conceptual density of, and the interpretative demands made by, mathematical symbols and graphic aspects, such as charts, tables and graphs.

In their first study Bohlmann and Pretorius (2002:197) were interested in two questions:

- Is there a relationship between reading ability and academic performance in mathematics?
- What specific kinds of comprehension problems do students experience during the reading of mathematics texts?³²

Some of their findings include the following (Bohlmann & Pretorius 2002:204-205):

- There is a “robust relationship between reading ability and academic performance in mathematics. Students who failed their mathematics examination had considerably poorer reading skills than those who passed. Reading ability does not of course guarantee performance in mathematics but the results do suggest that poor reading ability functions as a barrier to effective mathematics performance”.
- Weak readers are only achieving reading comprehension levels of 50% or less, which effectively means that half of what they read they don't properly understand, with dire consequences for their academic performance.
- The results indicate that the sequencing items posed the greatest challenge to the students. Although such tasks are not typically part of what mathematics students do, their

³² For a discussion of their analytical framework, see Bohlmann and Pretorius (2002).

performance in such tasks assesses the extent to which they pay attention to semantic and logical clues in a text to help them construct meaning while they read. These results indicate that the weaker students regularly miss vital clues that aid in constructing and keeping track of meaning in a text. This kind of response indicates an immature level of reading behaviour. Given that the reading of mathematics texts requires precision, and demands comprehension of each successive unit of text, failure to attend to explicit semantic and logical clues can cause a reader to miss the point of an argument and hence construct an erroneous and fragmented representation of the text.

Based on these findings, Pretorius and Bohlmann designed an intervention to, inter alia, impact on students' reading attitudes and practices in reading mathematical texts, to increase students' ability to deal with anaphoric references, to increase students' vocabulary, and to grow students' competency in dealing with text-semantic relation and visual information in general to increase students' reading rate and comprehension (Pretorius & Bohlmann 2003:227-228). Their research focus was whether explicit attention given to reading improved the reading ability and academic performance of mathematics students (Pretorius & Bohlmann 2003:232).

Among their findings are those mentioned below (Pretorius & Bohlmann 2003:234):

- The mean reading score of the group was extremely low to begin with, and after a 22-week intervention programme students only reached a mean of 56%. In other words, even after the intervention programme the majority of these students were still reading at well below their maturational levels. This finding highlights the severity of the reading problem.
- Even though the student who won the prize for best improvement in reading skill increased her reading score by 32%, she still only reached a level of 55%, which was in line with the average reading score of the Fail group of students of 2000. It would seem that unless students can improve beyond the 60% threshold, it is unlikely that they will derive sufficient benefit from a reading intervention programme to be successful in studying mathematics in a distance learning environment.

Pretorius and Bohlmann (2003:235) conclude that "[t]here are unfortunately no quick fixes in reading development. Skilled readers build up their skills over many years of exposure to the printed word. Although the five-month intervention programme did show encouraging results, the students were still averaging reading scores comparable to Fail students (ie scores of below 60%)".

4.4.2 THE IMPACT OF STUDENT SELF-ASSESSMENT AND AUTOPOIESIS (VARIOUS AUTHORS)

Simpson (2003:17) reports on an initiative at Napier University, Scotland, to share with students on registration a risk profile in the form of a self-assessment questionnaire. Students are invited to assess themselves using eight questions to self-determine their risk profile (Simpson 2003:17-20). In assessing the success and cost of different interventions to increase student success and retention, Simpson (2004:93-94) claims that more research is needed, that it is not clear how *many* interventions will turn around student success and who bears the responsibility for the interventions (and cost). In a follow-up study Simpson (2006) reports on the use of a questionnaire based on a predictive model. The possible impact of such self-assessment questionnaires can be found in the literature on self-authoring or autopoiesis.

Autopoiesis describes the process of self-creation or self-authoring as researched by Maturana and Varela (1980), Bandura (1997), Baxter Magolda (2001) and Pizzolato (2003, 2004, 2005). Pizzolato (2005:624) describes self-authorship as "a relatively enduring way of orienting oneself toward provocative situations that includes recognising the contextual nature of knowledge, and balancing this understanding with one's own internally defined beliefs, goals and sense of self". The process of

authoring the self, according to Baxter Magolda (2001) and Pizzolato (2003), is often triggered by a “provocative experience” causing disequilibrium, dissonance or dislocation. This experience challenges the students to reconsider and re-appropriate assumptions, beliefs, goals and identities. By naming their worlds and their identities, students and teachers take responsibility for not only “mapping” themselves against provided categories, but also plotting their own trajectories of development and even questioning the provided categories. This act of mapping, plotting and questioning is in its essence an action of autopoiesis or self-authoring.

Pizzolato (2003:803; 2005:625) found that not *all* disequilibrium results in perspective change. Students either avoid coping with the disequilibrium, or use a variety of individual and supported coping mechanisms (Pizzolato 2004:433). Some students, after initially reflecting and re-appropriating beliefs, assumptions, goals and identity, return to their pre-disequilibrium beliefs, assumptions, goals and identity (Pizzolato 2004:435).

The international literature seems to confirm that should students be made aware of their personal risks for failing, such a process of becoming aware of the risk may in fact be a “crossroads” as envisaged by Pizzolato. In view of the huge numbers of repeaters at Unisa and specifically in first-level Accounting, this research set out to develop a crossroads experience for repeater students.³³

It is interesting to note what institutions *do* with these research findings. The Napier University of Scotland has identified a number of factors as risk indicators (Simpson 2003:17-19). These factors include age, previous educational qualifications, type of accommodation, term-time job hours (if any), commuting time, financial worries, family expectations of students and other factors. Students are interviewed in the early stages of their enrolment. They are assisted in adapting their time management and resources according to their risk profile.

The Open University (OU) has a similar system in place where students complete a questionnaire on registration (Simpson 2003:19-20). The rationale for completing the questionnaire is stated as follows:

- for the student to become aware of the factors which may affect his or her performance
- to identify factors which may apply to each individual student
- to point to actions which the student might be able to take on some of the factors to improve his or her chances of success

4.4.3 THE IMPACT OF STUDENT SELF-ASSESSMENT OF RISK IN THE STUDY OF FIRST LEVEL ACCOUNTING AT UNISA (PRINSLOO, MÜLLER & DU PLESSIS 2009)

In a baseline study, Du Plessis, Müller and Prinsloo (2005) establish a basis for determining the risk profile of students in the study of first-year Accounting (ACN101) at Unisa. These authors found the following:

- **ACN101 repeats.** More students passed ACN101 the first time they wrote the examination. The pass:fail ratio decreased in the case of repeaters. This held true for BCom and BCompt students alike: 0.40 vs 0.31 for BCom and 1.21 vs 0.65 for BCompt students. Although not

³³Reporting on a pilot study by Prinsloo, Müller and Du Plessis (2009), these authors indicate that a very simple intervention based on the research by Simpson (2003) significantly increased identified at-risk students’ performance, although they were still not successful.

statistically significant for the others ± group, the ratio trend also suggested a lower ratio for repeat students (0.41 vs 0.34). Note that BCompt non-repeaters were the most successful group.

- **Time management.** Time management, likewise, indicated a general trend across motivational or degree categories. Part-time students were more successful than full-time students: 0.25 vs 0.37 (BCom), 0.60 vs 1.03 (BCompt) and 0.28 vs 0.4 (others). Although not statistically significant in the latter instance, the ratios suggested a similar trend for the others group. Note that part-time students studying towards a BCompt were the most successful group.
- **Age.** Across the three motivational categories, younger (17–30 years) students revealed a substantially higher pass:fail ratio than older students. There was a ratio of 0.39 vs 0.28 for BCom students, 1.00 vs 0.69 for BCompt students and 0.43 vs 0.29 for other students. Younger BCompt students proved to be the most successful.
- **Gender.** In the case of BCompt students, male students were more successful than females. The difference in ratio between males and females was substantial: 0.77 vs 0.47.
- **Language.** Although identified as a predictor, a clear-cut picture regarding language did not present itself. There was an indication that the others group lagged behind, but significance could not be attached to this (Du Plessis, Müller & Prinsloo 2005:694-696).

Du Plessis, Müller and Prinsloo (2005:696) conclude that the profile of the successful student has the following characteristics. The successful student is a

- BCompt student
- studying part time
- passing ACN101 at the first attempt
- aged between 17 and 30

In a follow-up study, Müller, Prinsloo and Du Plessis (2007) validate this profile using a different statistical method, namely the chi square automatic interaction detector (CHAID). For this study they explore the impact of the following characteristics on student success in first-level Accounting:

- **Gender.**
- **Home language.**
- **Prior subject-specific knowledge** as reflected in selected Grade 12 examination marks.
- The **number of times** the student had repeated ACN101-M.
- Time management, as reflected in occupational categories of full-time and part-time students (it was argued that time management could be measured in terms of occupational categories, so students were classified as part-time students, with an implied responsibility to manage their time, if they were employed while studying; or as full-time students, if they were unemployed with more leisure time on their hands).
- **Motivation**, as represented by the degree category for which the student was registered (motivation was taken to be reflected in the degree the Accounting student had registered for). Degree was categorised according to BCompt, BCom and other degrees for which first-year Accounting was a prerequisite. It was argued that a BCompt student would be more motivated as he or she aspires to a future professional career as a chartered accountant (CA), as opposed to students taking BCom and other degrees, where students have no choice but to take first-year Accounting and may therefore be less motivated to achieve success. Degree-linked motivation was therefore incorporated by classifying the degree variables according to BCompt, BCom and other degrees. A recent study by Jackling and Calero (2006) found that students' performance in first-year Accounting was an indicator of their intention to continue their studies to become CAs.

- **Age group**, where students were classified as younger or older than 30 (Müller, Prinsloo & Du Plessis 2007:25).

Their findings indicate that the profile of the successful ACN101 student is (Müller, Prinsloo & Du Plessis 2007:30)

- a motivated student (BCompt)
- a student who is not repeating ACN101
- a student who is younger than 30
- a student who manages his or her time effectively (part-time student)

Müller, Prinsloo and Du Plessis (2007:31) further found that “in more than 70% of the cases, CHAID predictions will lead to the correct classification of students as either to be at risk or successful”.

Proceeding from the work in another distance education context, namely the OU, this team of researchers then planned an intervention based on student self-assessment of his or her risk (Prinsloo, Müller & Du Plessis 2009). A risk assessment questionnaire (called a Toolkit for Success) was compiled (based on the work by Simpson 2003 in the context of the OU) and sent to 73 repeater students (Prinsloo et al 2009:14).³⁴ Prinsloo et al (2009:18) report that

[s]tudents who were alerted to their risk status displayed a significant improvement in performance - even though the improved pass rate could not be substantiated - as measured against the students who were not alerted. It is interesting to note that one student who was informed of his/her risk was indicated as an outlier in the analysis.

In their conclusions, Prinsloo et al (2009:19) propose, inter alia, the following:

- The ToolKit Risk Awareness Project furthermore forms *one* link in a series of options that have been investigated and envisioned as part of the planning of effective interventions addressing the dynamic interplay of various factors in a distance education environment. Consideration has been given to the idea of the timely departmental use of information on identified at-risk students during registration as much as advising students of the risk of failure (regular self-assessment risk awareness questionnaires at registration) and guidance via a more suitable academic route in fulfilling their initial ideals.
- Other options that are evolving simultaneously are considering alternative curricula for BCompt and BCom students, the advisability of admission examinations and bridging courses -- to name but a few.

4.4.4 THE FACTORS IMPACTING ON STUDENT SUCCESS IN INTRODUCTORY MICROECONOMICS AT UNISA (PRETORIUS, PRINSLOO & UYS 2009)

The context in which Introductory Microeconomics is taught at Unisa is unique not only because of the nature of ODL, but also because Unisa is the only higher education institution in South Africa which does not require students to have passed Mathematics at matriculation level before registering for Introductory Microeconomics. With a pass rate of less than 44%, the researchers explored the impact of various variables (as found in international literature) and institutional anecdotal evidence (assumptions and beliefs of lecturers teaching Introductory Microeconomics). The impact of the following variables was determined:

³⁴ For a detailed description of the Toolkit, see Prinsloo et al (2009).

- race
- age
- full time/part time
- language of instruction
- Mathematics at matriculation level
- handing in and passing assignments
- course load
- repeaters

Their findings point to the fact that gender had no significant impact and that younger students did better. The most significant factor in determining the success of students was studying in a home language. Students with full matriculation exemption outperformed students who did not have full exemption, and those who “passed Mathematics at matric level outperform[ed] those without Mathematics, with a pass rate of 51.83% compared to 33.11%”. (Pretorius et al 2009). Students who repeated the module after failing it a previous time did badly. “Interestingly, those students who were registered to write five or six modules apart from Economics outperformed their counterparts. (The categories were chosen given the patterns observed from the data)” (Pretorius et al 2009). Submission of assignments was found not to be a significant indicator. “The number of assignments passed, rather than the number of assignments submitted, thus provides a better indication of the students’ understanding of the work prior to the examination. A remarkable 85.77% of students who passed all four assignments eventually passed the module” (Pretorius et al 2009).

Significant for Unisa is the finding by Pretorius et al (2009) that “[t]he most striking trend observed, from a policy perspective, is that the offering of matriculation exemption seems to be less important as the number of assignments passed during the semester increases. For the subgroup that passed three assignments, this variable has a probability of 5.3%, while for the subgroup passing all four assignments, the probability increases to 48.8%, leaving the variable statistically insignificant in this regression”. According to these authors, it is “*significant to note that the final mark is not significantly affected by the matriculation status when the student puts in more effort from his or her side*”(Pretorius et al 2009; italics in the original).

Concluding, these authors petition for the inclusion of Mathematics as a prerequisite in the registration requirements for Introductory Microeconomics and the passing of at least two assignments in order to gain admission to the examination (Pretorius et al 2009).

4.4.5 HOW CAN WE RETAIN THEM? AN INVESTIGATION INTO THE EARLY CANCELLATION OF COURSES IN A DISTANCE LEARNING INSTITUTION (VAN SCHOOR & POTGIETER 2009)

In a recent unpublished study by Van Schoor and Potgieter (2009) they explore

the reasons why students in a distance learning institution cancel courses early on in the academic year. By identifying the reasons for early cancellations, a knowledge base can be built to support a more complete understanding of the multifaceted phenomenon of retention in a distance learning institution. Understanding the dynamics of retention will in turn lead to the development of preventative measures to increase throughput.

The focus of their research was the period before 15 March 2005 in which 8 935 students cancelled their registrations, whether they were registered for year courses or semester modules (Van Schoor & Potgieter 2009). They developed an open question protocol in which they interviewed a random sample of 333 students.

An overview of some of their findings is that

- gender does not play a significant role in the cancellation of courses
- a significant number of students who cancelled their registrations had been registered before at Unisa
- although the largest percentage of cancellations was from part-time students (43%), a “noteworthy finding was that 32 percent of the cancellées were classified as full-time students”
- students who studied in their second or third language formed 60% of the group of cancellées
- although a large number of the sample’s school records were incomplete (only 155 of 333 records were usable), the “statistics imply that the general scholastic preparation of students who cancel courses is suspect ... It can therefore be expected that when confronted with the academic demands of university courses for which they are inadequately prepared, they would tend to withdraw from the system”
- with regard to external factors that impact on students’ intention to leave or remain, lack of time for study (19% of the total variation) and personal circumstance (17% of the variation) accounted for the biggest variations; only 5% expressed financial concerns as a reason for cancellation
- incorrect choice of the course contributed to 13% of the variation, while 23% of the variation was attributed to inability to cope with the academic demands of the course

Based on these findings, Van Schoor and Potgieter (2009) continue to explore the implications for the envisaged managed open admission strategy (MOAS) strategy of Unisa. They propose that the MOAS will flag critical incidences.

Based on the outcomes of the study the flags will initially be based on the following:

- being female and having to handle a variety of roles
- new students who enrol for the first or second time at the institution
- working full time and finding it difficult to manage time properly
- effect of changes in work circumstances
- personal problems and their potential impact on performance
- service delivery problems from the side of the institution and how to use a hotline to announce the problems to management
- doubts about career, course and subject choices
- inability to manage time adequately³⁵

³⁵ For a full discussion on MOAS, see Van Schoor and Potgieter (2009) and the responsible open admission process (ROAP) contained in the Fourth MOAP Progress Report and ROAP Implementation Plan (2009).

4.5 NEW DIRECTIONS IN THEORETICAL DEVELOPMENT ON STUDENT THROUGHPUT

This overview of new theoretical considerations consists of a number of contributions compiled and edited by Braxton (2000).

4.5.1 THEORETICAL CONSIDERATIONS IN THE STUDY OF MINORITY STUDENT RETENTION IN HIGHER EDUCATION (RENDÓN, JALOMO & NORA 2000)

Rendón et al's main points of criticism (2000:128-130) against Tinto's model is that the context and situational factors inherent in being part of minority groups on American campuses have been ignored by the major theorists on student retention. Rendón et al (2000:132) therefore severely criticise the Tinto model's use of Van Gennep's three-phase process of integration, namely separation, transition and incorporation. The basic assumption that individuals and groups should disassociate themselves from their original roots to be assimilated by the majority (often white and male) culture is untenable. Rendón et al (2000: 142) question the assumptions of the current models explaining throughput because of their foundations in studies based on "full-time, traditional-age, residential, middle-class, white, male students". They assert that the "lack of a grounded historical perspective has led to the frequent omission of minority groups, or else they are identified as a source of their group's problems (a deficit perspective)". They continue: "Rather than conducting culturally and racially based studies that can uncover new variables and that can offer insightful and meaningful findings to transform institutional structures that preclude academic success for minority students invisible hierarchies are left intact" (Rendón et al 2000:143).

Rendón (1994, in Rendón et al 2000:138-141) suggests a **validation** model as opposed to a **deficiency** model and a focus on academic success as opposed to academic failure. The assimilation and integration models do not allow for cultural groups to "contribute their *own* perceptions and definitions of all that constitutes integration" (Rendón et al 2000:150; emphasis added).

These authors draw up a list of characteristics of Latino students who found it difficult to get involved in their community college (Rendón et al 2000:147):

- married students with family obligations
- single parents
- students who have been out of school for some time
- students who are the first in families to attend college
- students who never liked high school or who were rebellious in high school
- students who have had negative experiences with former teachers or administrative staff in elementary and secondary schools
- students who were not involved in academic activities or school groups during high school
- students who did not participate in school-based social activities or student programmes during high school
- students who are afraid or feel out of place in the mainstream college culture
- students who have had negative interactions with college faculty or administrative staff
- students taking evening courses when little or no services are available
- students who lack the financial resources to take additional courses or participate in campus-based academic and social activities in college

Validation has been found to be essential to such students' engagement and persistence (Rendón et al 2000:149). These authors describe validation as "a powerful, interactive process involving a student and a validating agent" (Rendón et al 2000:149).

4.5.2 REFINING DISCOURSE ANALYSIS AS A TOOL FOR GENERATING NEW DEPARTURE THEORY (JOHNSTON, JR 2000)

A significant pointer regarding a possible methodological framework is the work by Johnston (2000:157-169) regarding the use of discourse analysis as a tool for generating new departure theory. He states that “the problems in Tinto’s model are beyond correction by theory extension or elaboration, and the remainder of the traditional theories are similarly flawed” (Johnston 2000:159). He provides three pointers for a new impetus in understanding student retention and throughput (Johnston 2000:159-160):

- a. Research on student departure and persistence should be qualitative.
- b. Research must be culturally sensitive or culturally based.
- c. A discourse orientation will provide evidence for the formulation of new departure theory.
- d. Student retention and throughput are cultural constructs and that grounded theory may provide a way into the cognitive maps underlying the student experience.

Johnston (2000:163) suggests exploring the metaphors we use when talking about student throughput. These metaphors and terminology “indicate deeper structures of discourses than content and deliver more information about the speaker’s understanding of cultural belonging and decision making”. He therefore proposes that we draw up cognitive maps of the institutional discourse as well as students’ narrations of their journeys (Johnston 2000:166). He concludes that finding appropriate rich descriptions of student experiences is essential in devising effective interventions. “The more thorough the understanding of the evidence, the more appropriate the response will be” (Johnston 2000:167).

4.5.3 LINKING STUDENT BEHAVIOURS, COLLEGE CHOICE, AND COLLEGE PERSISTENCE (STAGE & HOSSLER 2000)

Stage and Hossler (2000:170-195) suggest that students are active agents in the whole process of making choices regarding persisting or cancelling their studies. Students are not “passive recipients of experiences” (Stage & Hossler 2000:172). These authors propose understanding and supporting students’ self-efficacy as active agents in their making of choices. “Self-efficacy is related to motivation in that if an individual believes he or she has the capability to perform a task and that performance will then lead to a positive result, the individual will be motivated to perform” (Bandura 1989, in Stage & Hossler 2000:174). Self-efficacy is furthermore not linear and only progressive, but often spiral and cyclical (Stage & Hossler 2000:175).

4.5.4 A CULTURAL PERSPECTIVE ON STUDENT DEPARTURE (KUH & LOVE 2000)

Student habitus *and* institutional habitus, in their extremely rich layers of dynamic interdependencies, may provide an alternative (to Tinto) lens through which to engage with the student experience (Kuh & Love 2000:196-212). These authors propose a cultural model for understanding student throughput (Kuh & Love 2000:201):

- a) The college experience, including the decision to leave college, is mediated through a student’s cultural meaning-making system.

- b) One's cultures of origin mediate the importance attached to attending college and earning a college degree.
- c) Knowledge of a student's cultures of origin and the cultures of immersion is needed to understand a student's ability to successfully negotiate the institution's cultural milieu.
- d) The probability of persistence is inversely related to the cultural distance between a student's culture(s) of origin and cultures of immersion.
- e) Students who traverse a long cultural distance must become acclimated to dominant cultures of immersion or join one or more enclaves.
- f) The amount of time a student spends in one's cultures of origin after matriculating is positively related to cultural stress and reduces the chances they will persist.
- g) The likelihood a student will persist is related to the extensity and intensity of one's sociocultural connections to the academic program and to affinity groups.
- h) Students who belong to one or more enclaves in the cultures of immersion are more likely to persist, especially if group members value achievement and persistence.

4.5.5 POWER, IDENTITY, AND THE DILEMMA OF COLLEGE STUDENT DEPARTURE (TIERNEY 2000)

Tierney (2000:213-232) explores the cultural construction of the notion of dropout and points to the fact that in some cultures the idea of "dropout" does not exist. Based on a cultural and functionalist view of higher education and student persistence, Tierney (2000:217) proposes that we address the underlying and inherent structures and meanings of the world of higher education and learning.

In effect, the system is hemorrhaging, and rather than treat the problem we try to slow the bleeding. The metaphor is purposeful. I certainly appreciate campus-based programs that try to stop individuals dropping out of college, but those of us involved in campus remediation efforts need to act less like emergency-room medics and more like preventive physicians.

He continues by saying that once "we learn that culture exists through powerful definitions that enable some and disable others, we are then able to investigate issues such as the hidden curriculum, the social organisation of classrooms, and inherent pedagogical practices that occur every day. From such studies we learn how power operates through culture's webs" (Tierney 2000:217). He states that the challenge in developing a model supporting student throughput and retention is to "develop ways in which an individual's identity is affirmed, honoured, and incorporated into the organisation's culture" (Tierney 2000:219). He suggests five key points for the development of such a model (Tierney 2000:219-223):

- a) *Collaborative relations of power*
The problem with the idea of fixed relations of power is that some groups and their practices end up as deviant and subordinate while others are mainstream and superior. The only possibility for those without power is to become more like those in power or to express resistance ...
- b) *Connections across home, community, and schooling*
Successful programs cannot be developed unless we acknowledge the particular backgrounds of those whom we seek to educate ... An alternative framework is to develop programs that are palpably local in definition. We begin working from where students are. The assumption that a ritual of transition is necessary for students to succeed is rejected in favour of activities that affirm the identities, homes, and communities in which individuals live and grow.
- c) *Local definitions of identity*

If one wants to be not merely a purveyor of information and subject matter but also a transformative intellectual who seeks to challenge and engage students to perform to the best of their ability, then of consequence one must come to terms with the backgrounds and forces that have shaped those individuals who sit in classes.

d) *Challenge over remediation*

It is not about lowering expectations but to give challenging work to students [which conveys] respect for their potential and this shows that they are not regarded through the lens of an ability-demeaning stereotype.

e) *Academic support*

Programs that see individuals as broken and in need of repair are less likely to create the conditions for success than those programs that assume students are available resources to themselves and their families, communities, and society ... The key word here is *respect*. However different in age, learning, or educational degree, those programs that honour a student's position are more likely to help the student succeed than programs that concentrate solely on erasing perceived and/or real academic shortcomings.³⁶

4.6 SOME POINTERS FROM LITERATURE FOR THE DEVELOPMENT OF UNISA'S CONCEPTUAL MODEL

From these different theories and models it seems as if the most we can state is that students' persistence results from a dynamic interplay between personal, institutional and broader contextual factors. In the absence of what Merton calls a "grand theory", Tinto (1982:688) asserts that "our theoretical models serve to explain only a portion of the wide range of behaviours that constitute the universe of social interactions". Yorke (2004:26-29) attempts to summarise the implications of these different models on student retention and maintains that student persistence is influenced by a variety of factors, but that it is "students' perceptions of their learning experiences and how they have been treated by providers of courses [that] are likely to be of prime significance". Tinto (2006:6) adds: "Leaving is not the mirror image of staying. Knowing why students leave does not tell us, at least not directly, why students persist."

There are, however, some significant pointers from this literature review:

1. Although Tinto's interactionist theory/model enjoys "near paradigmatic" stature (Braxton 2000:2), it "is partially supported and lacks empirical internal consistency" (Braxton 2000:3). It therefore needs revision (Braxton & Lien 2000:11). Multi-institutional tests provide strong support for Tinto's theory while single-institutional appraisals "accord modest empirical backing" (Braxton & Lien 2000:14-22). The impact of Unisa's ODL context on Tinto's theory is still to be investigated (as proposed by Braxton & Lien 2000:26).
2. The tangible and intangible impacts of economic influences on persistence in an African ODL context remain under-researched. The impact of economic considerations as a psychological stressor may in a developing world context play an even more important role than in other contexts (as suggested by St John, Cabrera, Nora & Asker 2000:37-39).
3. The literature review confirms the findings by Hall (2001:iv), who found that

³⁶ For an in-depth discussion of these five pillars of Tierney's proposal, see Tierney (2000:224-231).

- retention rates differ by sector of education, age of students, level of course, subject of course, socio-economic group and institution
 - data on student retention is often of poor quality and may be inaccurate or misleading
 - reasons for student dropout operate at individual-student, institutional and supra-institutional levels
 - widening access is likely to result in increasing levels of student dropout
4. Evidence suggests that these factors impacting on student throughput and retention operate differently for students of different ages, and that different factors influence early leavers and later leavers. Younger students are more likely to have made a poor choice of course and to cite programme difficulty, while mature students are more likely to leave because of external circumstances (as found in the EPI 2008).
 5. Student retention is a complex and layered, dynamic web of events (Tinto 2006).
 6. Woodley's warning (2004:55) regarding the particular character of distance education should always be kept in mind. To reiterate, he states that
 - students no longer register for a particular qualification or programme, so anything like a graduation rate is impossible to calculate
 - dropout has to be extended to consider those students who finish one course or module but who do not continue to study immediately
 - students can leave with interim qualifications such as certificates, diplomas or just course credits and be "successful" in their own terms
 - students can transfer to other institutions to complete their learning
 - students can take as many years off as they like
 7. Several studies (eg EPI 2008) have emphasised the impact of first-generation students.
 8. Should students study in English as a second or third language, their exposure to English at home and in primary and secondary schools is a crucial indicator of their chances of success in studying in English in higher education (see, for example, REAP 2008; Eiselen & Geysers 2003).
 9. Conceptual confidence and cognitive dissonance play a critical role when students study in a second or third language (see, for example, Koen 2007; REAP 2008).
 10. Poverty and access to financial security for and while studying plays a major role in student throughput and dropout (REAP 2008). There is also ample evidence to indicate that students experience a number of poverties while in higher education (see, for instance, Schenk 2008).
 11. Tutorial programmes and programmes focused on assisting at-risk students are often perceived as stigmatising and humiliating (Eiselen & Geysers 2003) and do not have the desired impact (REAP 2008).
 12. The questions asked by Koen (2008) remain unanswered by the literature review:
 - Why do financially well-off students who performed well at school, whose school subjects and university courses are aligned, and who receive adequate financial support leave the university?
 - Why do students with good marks leave institutions?

- Why do students who were attracted to an institution based on its reputation and the values it articulates end up leaving because an incompatibility developed between their expectations of the institutions and their experiences?
 - What is the relationship, if any, between academic department and structural university characteristics like planning organisation, institutional rules, institutional socialisation, academic culture and student success and failure?
 - What is the relationship between student aspirations, expectations, intentions, study plans and retention?
13. The hypotheses proposed by Koen (2008:33-34) seem to be valid in the light of the literature review:
- Students who receive inadequate academic and institutional support, and who do not enjoy strong social interaction with academics and fellow students, are more likely to leave than are other students.
 - Weak academic departments and faculties (in terms of the number of PhDs and the type of resources available for research training and socialisation) are more likely to struggle to retain students than are strong departments.
 - The distribution and availability of organisational resources (like supervisors) will affect the morale of academics and students and their motivation and commitment to stay and succeed.
 - Student socialisation experiences and the extent to which institutions apply rule-forming behaviour are likely to play a significant role in retention.
 - Resources influence the level of student motivation and commitment to completing a master's course, the type of academic support they receive and the degree to which they are affirmed in departments.
 - Socio-economic and household factors play a strong role in retention, and create pressures that force students away from master's study.
 - Students' motivations, aspirations, expectations, intentions and study plans play crucial roles in retention.
14. Interpersonal and intrapersonal factors as major contributing factors in understanding student throughput have been validated in the literature review (see, for instance, Spady 1970).
15. Students' reasons for dropping out or persisting are often related to racial and gender distinctions depending on the context and in relation to other variables (see, for instance, Bean 1980).
16. The nature of students dropping out of higher education is related to gender and family roles (see, for example, Stratton et al 2001).
17. Parental education, current marital status, parental status and financial security are important variables (see, for example, Stratton et al 2001).
18. The important role of student and institutional habitus (and the inherent cultural capital) has been confirmed by the literature review (see, for instance, Berger 2000).
19. Self-efficacy, attribution and locus of control have been confirmed by the literature review to play significant roles in students' success or intention to leave (see, for instance, Parker 1999).
20. Students' prior learning experiences play a significant role in their perceptions of locus of control, entitlement and self-efficacy (see, for example, Rendón et al 2000).

21. Research into student throughput, dropout and success should be quantitative and increasingly qualitative. Research should take cognisance of the fact that these concepts are cultural constructs, and cognitive maps may provide rich and invaluable descriptions of the student experience (see Johnston 2000, for example).
22. Tierney's proposal (2000) for a four-pillar model to respond to the findings of a tracking system is worthwhile exploring further.
23. Scot et al (2007: viii) have pointed out that higher education in South Africa has a very specific mandate shaped by the context of the "shortages of high-level skills and concurrent incidence of graduate unemployment". Although the higher education sector's response is shaped by a number of things outside its locus of control, Scott et al (2007:viii) propose a number of strategic and systemic conditions for the improvement of student success, namely
 - the reform of core curriculum frameworks;
 - building educational expertise in the sector to enable the development and implementation of teaching approaches that will be effective in catering for student diversity; and
 - clarifying and strengthening accountability for educational outcomes.

With these pointers from literature, I will now continue to propose and discuss a socio-cultural model to understand student throughput and success at Unisa³⁷.

4.7 TOWARDS A SOCIAL-CRITICAL MODEL FOR UNDERSTANDING AND ENHANCING STUDENT THROUGHPUT AND SUCCESS AT UNISA

4.7.1 A FRAMEWORK FOR AN INSTITUTIONAL RESPONSE

It has long been acknowledged that one of the key challenges facing Unisa as a high-quality effective ODL provider is the improvement of its student success and throughput rates. This imperative emanates from the recognition that expanding higher education participation and access must be matched by enhancing success, retention and throughput rates. Accordingly, this goal is central to both national higher education policy and to Unisa's strategic objectives. An additional challenge is to ensure a positive student experience throughout all points of interaction with the institution through operational efficiency and student-centred service excellence.

Previously, Unisa's efforts to address this challenge were conceptually and structurally siloed into academic and counselling components. More recently, a unified approach has been adopted by the formation of a single Throughput Forum, a subcommittee of the Senate Tuition & Learner Support Committee. During the course of 2008, the Forum adopted a comprehensive framework to address the problem. This entails a number of steps:

³⁷ The proposal for a socio-critical model was shaped by the conversations between members of the working team. The final proposal is the outcome of conversations between Prof Subotzky and Dr Prinsloo. Prof Subotzky wrote the sections on the framework for an institutional response and the conceptual model, and contributed to the conclusion.

- a) Drawing from an in-depth literature review, understanding all possible conditions and factors shaping student success and throughput through a **comprehensive conceptual modelling** of the process, appropriate to the Unisa context;
- b) Within this, **identifying relevant, knowable, measurable and available qualitative and quantitative data and information**;
- c) By means of a student tracking system, **gathering all the required information and statistically modelling this** in relation to Unisa's heterogeneous student profile and, further, readjusting model as necessary;
- d) On the basis of this, **identifying those factors which impact on success and throughput** in the Unisa context and, conversely, the nature and timing of risks in this regard;
- e) Thus informed, using the findings as actionable intelligence, **strengthening existing learner support initiatives and academic and administrative practices and identifying new ones** in order to improve success, throughput and the student experience;
- f) Implementing these, and subsequently **monitoring and evaluating** their impact over time and applying further improvements where applicable as part of continuous improvement.

A modelling task team was formed to undertake the first step in the process. This comprised: Prof George Subotzky, DISA; Prof Chris Swanepoel, Decision Sciences; Dr Paul Prinsloo, DCLD; Dr At van Schoor, BCCAD; and Ms Hanneri Botha, ICT.

The overall purpose of the modelling initiative is to inform and guide all institutional practices which impact on student success, throughput and positive experience. This includes learner support and all relevant academic and administrative practices across the institution. The findings of the literature review and the proposed conceptual model are presented in this Discussion Document. The intention is to engage as widely as possible on this document in order to gather responses. On Thursday 2 April 2009, the document will be introduced to the broader Unisa community in a Strategic Discussion Forum. During the event, two eminent respondents who are experts in the field, namely **Prof Ian Scott**: Deputy Dean: Centre for Higher Education Development, University of Cape Town and **Dr Gugu Moche**: Director: School of Science, Unisa, will respond to the Discussion Document³⁸. These and other responses will be incorporated in a final version, which will then be formally submitted to the Senate Tuition and Learner Support Committee and subsequently to the Management Committee and Senate.

The conceptual model by firstly introducing a broader institutional framework against which it was develop and in which it will unfold; then propose a five key constructs which will inform the model and then finally introduce the conceptual model as a specific socio-critical model to understand and enhance student throughput and success at Unisa.

4.7.2 KEY CONSTRUCTS

The proposed constructs share a common context. The constructs are intimately linked to our (Unisa's staff and students') shared *past*, our *present* and our commitment to a more sustainable, just and humane *future*.

The first aspect of this common context is the impact of our colonial and apartheid past on the role of higher education. The different proposed constructs are shaped (in more than one way) by the socio-historical, political and economic "tectonic layers" of our shared *past*. South Africa's past

³⁸ This section, slightly amended, was published in a Unisa Intcom message on Friday 27 March by the Department of Information and Strategic Analysis, (http://www.unisa.ac.za/cmsys/staff/contents/e-notice2009/march/docs/DISA_invite_26March09.pdf). Accessed 29 March 2009.

shaped and continues to shape the lives of individuals and institutions, often in unpredictable ways. Higher education in general, and Unisa's curricula and mandate, are caught in balancing memory, forgetting and dreaming.

In the Principal's address to mark the official opening of the academic year 2009 at Unisa, Prof Pityana stated that Unisa remains

Cognisant of the central role that education plays in national reconstruction, in the creation of a learning and knowledge society, in the quality of citizenry, and in carving and shaping the creative talent and innovation for the greater good. ... Our university would have no cause to exist, no moral purpose unless we were able to look beyond selfish interest and know ultimately that we are in the business of constructing a new world for a new society (Pityana 2009:1-2).

Unisa's dream and vision "Towards *the* African university in the service of humanity", is specifically born from an acute memory of our past, the responsibilities of the present and the shared dream for a "new world for a new society." As such Unisa is caught in the often uncomfortable space of memory, forgetting and dreaming. Booth (1999) explores memory and forgetting in the context of the shaping of a new German identity post-holocaust and post-unification and states:

Forgetting and memory both seem vital to our common life, and it is equally possible that we may have too much of either. An excess of forgetting would turn us into leaves to be scattered by the winds, mere neighbours passing one another by in little more than a community of interests. Too much memory would be lead in our wings, denying us a future and closing off the possibility of openness to others who are not part of our community of memory (Booth 1999:259).

Reflecting on the impact of the past on the lives of individuals and institutions, Booth writes that the "tectonic layers of our lives rest so tightly against earlier events in later ones, not as matter that has been fully formed and pushed aside, but absolutely present and alive." The proposed constructs can therefore not be understood without understanding how the "tectonic layers" of our shared past shaped and continue to shape the lives, hopes, literacies and expectations of individual students, communities, employers but also of the higher education policy framework in which Unisa finds its mandate. Although we specifically speak in our first construct of the student as "situated agent", the notion of situatedness is embedded also in the nature, mandate and operations of Unisa as a distance education institution³⁹.

It is however not only the past that shapes individuals and institutions, but also the *present*. The effects and impacts of the "present" refer to macro-level seismic events over which individuals, communities, and institutions have no control. These seismic events include (but are not limited to) the collapse of the financial markets with thousands of people losing their jobs, natural disasters, pandemics, political instability and the often unpredictable unfolding of xenophobia and racism. These seismic moments of shifts impact on the lives of individuals and generations of communities and are not taken into account in modelling student throughput and success.

Gladwell (2008) highlights the impact of big societal shifts on the personal histories of men and women and illustrate how these shifts shape the options individuals have, their responses and their eventual success or failure. Being born in a particular generation or race opens or closes a number of

³⁹ We would like to point to two crucial documents for understanding the embeddedness of Unisa in the higher education landscape in South Africa. The first document is *Towards a new higher education landscape: meeting the equity, quality and social development imperatives of South Africa in the 21st century* (CHE 2000). The second seminal document is titled *Enhancing the contribution of distance higher education in South Africa* (CHE 2004).

possibilities. Being at a particular location at a specific point in time has major ramifications for individuals. Gladwell (2008) explores how these big societal shifts impact on individual's success and the trajectories of their lives. Gladwell's insights (2008) regarding the impact of big societal shifts may provide some critical pointers for examining, for example, the success (or failure) of first generation students. Many international studies focus on first generation students as a specific group needing special attention (eg Jehangir 2009; Hravey and Drew 2006). In the South African context, the University of the Witwatersrand (Wits) have launched a specific initiative "First in Family" programme to support first generation students (Govender in the Sunday Times of March 15, 2009:5). I would like to caution however that the emphasis on "first generation" characteristic of students is not a simple phenomenon. All generations have their "first" entrees into higher education. Historical evidence pays tribute to the fact those previous generations' "first students" faced many of the same odds than present day first generation students. Yet, although the odds were against them, they were, in general, more successful than today's first generation students in the South African context. The obstacles faced by first generation students from different cultures, classes and social and economic circumstances will vary widely. Relatively advantaged first-generation students among Jewish immigrants, for example, are likely to possess for more academic, epistemological and cultural capital and are therefore much more likely to succeed than their counterparts from the urban and rural poor communities. Unisa cannot (and should not) see this variable outside of the broader societal impacts and shifts as Gladwell (2008) suggests. The point I want to reiterate is that except for the legacies of national, institutional and personal pasts, there are seismic events over which individuals and institutions have little or no control⁴⁰.

The last aspect of our situatedness, as students and as institution, is our understanding of our shared *future*, our vision and mandate. Education in South Africa, after 1994, is seen as an appropriate vehicle to shape a society which is more humane, more just, more compassionate, and more sustainable. No education is neutral. Education is *always* in service of a particular ideology (eg Apple 2004; Bernstein 1977, 1996; Soudien & Baxen 1997). Unisa's situatedness prompts us not only to respond to the tectonic layers of our shared *past* and uncertainties of the *present*, but also in shaping our *future* world (see for example Pityana 2009). Higher education in South Africa is therefore in the service of transformation and emancipation⁴¹. It is for this reason that the model proposed here is a socio-critical one, aimed not only at understanding the phenomenon of success and throughput but also at changing praxis in order to enhance success and throughput and in so doing contribute simultaneously towards greater equity and development. As Unisa explores the literacies students will require in shaping a more sustainable, humane and just society, it is important to remember the challenge by Freire who saw education as a vehicle to empower students to "read the word" and "read the world". "The act of learning to read and write has to start from a very comprehensive understanding of the act of reading the *world*, something which human beings do before reading the words" (Freire 1989: xvii; italics added). All language, according to Freire, works to reproduce dominant forms of power relations, but it also carries with it the resources for immanent critique, for dismantling the oppressive power structures of the social order, and also for articulating a more transformative and liberating vision for the future (McLaren & Da Silva 1993:53).

Freire's work on reading involved allowing students to become aware of *codifications*, words that outside their linguistic meanings, also 'present problematic social conditions' (Burbules & Berk 1999:53). Freire's literacy strategy also involved encouraging students to decode words and linguistic practices. In learning to 'read the word' students were empowered to 'read the world'. This means a dramatic turn from education as transmission, which Freire describes as 'banking education' –

⁴⁰ For a discussion on the scope of control of the higher education sector, see Scott et al (2007).

⁴¹ See the report of the Council of Higher Education (CHE)(2000).

“Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor” (1973:45). The emancipatory alternative to ‘banking education’ is dialogical ‘problem-posing’ education (Freire 1973:53) where

Through dialogue, the teacher-of-students and the students-of-the-teacher cease to exist and a new term emerges: teacher-student with students-teacher. The teacher is no longer merely the-one-who-teaches, but one who is himself [sic] being taught in dialogue with the students, who in their turn while being taught also teach (Freire 1973:53)⁴².

Higher education in South Africa has a specific mandate and that is, amongst other aspects, to contribute to students who not only have the competencies needed in places of work, but who can also name and critically *re-name* the world, designing new taxonomies to deal with the increasing diversity, uncertainty and risk. As the reality of climate change and the increasing gaps between the rich and the poor (as individuals and as nations) become more apparent every day, the call becomes more urgent for curricula and institutions of higher learning who can question the grand narratives of the past (Barnett 2000a) and fulfil responsible roles in an age of supercomplexity (Barnett 2000b). Such critical understanding is the foundation for becoming critical change agents.

Neither institutions nor students can escape their situatedness against the backdrop of the tectonic (still shifting) layers of the past, the dynamic and unpredictable often seismic events individuals, communities and institutions daily face as well as functioning in a particular mandate of education as transformative project. These constructs which follow flow from this understanding of a shared past, present and future.

We propose the following key constructs to inform Unisa’s conceptual model:

- The student as *situated agent*
- The student habitus
- The institutional habitus
- The dynamic nature of the student walk
- A broad definition of “success”

We will now continue to explore the five key constructs on which the conceptual model is based.

4.7.2.1 CONSTRUCT 1: THE STUDENT AS *SITUATED AGENT*

Many interventions in higher education attempt to positively influence student throughput and success, and forget that students are *agents*, and not passive recipients of input from institutions, however well intended (see the discussion on students as *agents* in Stage & Hossler 2000:170). Throughout students’ lives they make choices, they engage with resources, they learn patterns of behaviour and accept certain levels of self-efficacy. They develop patterns of entitlement and blaming. Their agencies are formed by the many interactions they have in the contexts of their increasingly complex social networks: their core and extended family structures, primary and secondary education, their communities and relationships with peers, their exposure to the array of virtual, socio-cultural, economic communities through the media and internet, and their expectations of what they want to achieve by enrolling in higher education. As *agents*, they *chose* to enrol in higher education. Due to making choices (on whatever grounds), they will persist, stop out

⁴² Banking education “attempts to maintain the *submersion* of consciousness; the latter strives for the *emergence* of consciousness and *critical intervention* in reality” (Freire 1973: 54; italics in the original).

or drop out of higher education. Their choices are the results of many influences and forces, some of which lie deeply indented in unequal social structures and power relations and the myriad of other socio-economic-political dynamics which serve to reproduce inequalities. Regardless of the sensibilities of their decisions to persist or dropout, they are, firstly, actors and agents⁴³. However, shaped by these structural conditions and forces, they must be regarded as relatively autonomous actors and agents. The notion of choice, therefore, should be seen as a situated phenomenon, constrained by particular structural conditions and forces, and not as the outcome of an ahistorical universalist notion of autonomous agency.

The *inter-* and *intra-*personal domains and dimensions of students as agents play an important role in the proposed conceptual model. The *intra-*personal dimensions of agency emphasise the liminal spaces where the **self-efficacy**⁴⁴ of students, **anomie**, their **attribution** of their success or failures as well as their **locus of control**, meet⁴⁵. **Self-efficacy** of individuals is described by Bandura (1997, in Stage & Hossler 2000:172) as “beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives.” **Anomie** or alienation plays a major role in all of these student responses⁴⁶. **Attribution** theory refers to the way the individuals (and institutions) attribute success or failure to factors outside of their own responsibilities and/or capabilities. Individuals normally “attribute” possible causes to events or results of their actions. **Locus of control** refers to the extent to the extent individuals believe that they can actually control events that affect them. Locus of control normally differentiates between individuals who have a high/low *internal* locus of control and individuals who have a high/low *external* locus of control. Individuals with a high *internal* locus attribute their success or failure as result primarily from their *own* behaviour and actions. Those with a high *external* locus of control believe that events and persons over which they do not have control primarily determine events.

The *inter-*personal aspects of students’ agency emphasise the different layers of relationships with peers, significant others, role models, family members and members of different communities and enclaves. Through these interactive relationships, individual identity and attributes are in part constructed. The exact nature of the impacts of the inter- and intra-personal dimensions of students as agents on students’ decisions to persist or withdraw, as well as their potential to succeed, is very difficult to determine and predict. This dual layer of inter- and intra-personal does however provide a number of opportunities to identify possible **deficiencies** and **potential** for validation and strengthening. Some of the traditional models on student throughput emphasise the *deficiencies* students have, accentuating what students *don’t* have, like their lack of a certain understanding of academic literacy, or lack of autonomy, and so forth. Recent developments in understanding student retention (eg Berger 2000; Rendón et al 2000) emphasise the need to *also* validate what students *do* have, their prior knowledges, the ways they negotiate encounters with the dominant cultures, their strategies for survival (often in situations of socio-economic deprivation and racism) etc.

There is, however, a very important characteristic of students’ agency, namely the fact that students are *situated* agents. Students’ different biographic and autobiographic identities link very closely to their self-worth, self-efficacy and multiple identities. These identities are, on the one hand,

⁴³ See an interesting and thought-provoking article by Bernal (2001) on how Chicana students draw from what they learn in their homes to develop a competencies to negotiate their ways of knowing and being.

⁴⁴ In discussing the key constructs we have highlighted key terms and concepts in **bold**. The literature review pointed out these concepts to be significant in developing a conceptual understanding of student success.

⁴⁵ Interestingly, self-efficacy, locus of control and attribution also play a role in the way the institution reacts and responds to student failure and success.

⁴⁶ The role of anomie will be discussed in detail under institutional habitus.

'products' of their habitus⁴⁷ and on the other hand, their identities are the results of different dynamic and interdependent, ever-evolving processes within and outside of their habitus⁴⁸. Their identities are often reduced to lists of deficiencies and potentials, and yet, these categories, (albeit possibly helpful) should not distract from the dynamic and often fluid and multi-layered nature of identity as personal and social constructs. Unisa's conceptual model should not only take into account students' abilities and deficiencies but also, and maybe more importantly, *who* they are. Students' identities bring into play issues of gender, age, socio-economic status, class, and so forth. Traditional models on student throughput often emphasise and cluster students according to abilities and not take into account the dynamic interdependencies of these abilities and/or deficiencies with identity (see for example the importance of identity in the discourse on student throughput in the work of Tierney 2000:221). Tierney (2000:221) points to the fact that educators often have very little understanding of *who* they teach.

If one wants to be not merely a purveyor of information and subject matter but also a transformative intellectual who seeks to challenge and engage students to perform to the best of their ability, then of consequence one must come to terms with the backgrounds and forces that have shaped those individuals who sit in classes. Department chairs, deans, and hiring committees will take into account how teachers view students and how the organisation teaches new instructors about the backgrounds of their students.

Concepts like 'voluntary' and 'involuntary' **withdrawal** creates the impression that students have a *complete* free will in making choices. Fenwick (2009: 105) refers to the work by Levinas (1981) in which "counters the view that individuals act and reason as *autonomous* agents, and stresses the intersubjective relationships that enmesh human beings with one another beyond their conscious intention or rational application of moral principles". While some may disagree or agree with Fenwick's (2009) and Levinas' (1981) notion of autonomy, *autonomy* as notion played (and still plays) an important role in the historical development of distance education (see for example Garrison 2000; Moore 1986). I will now provide a brief overview of autonomy as it has functioned in the discourse on distance education before trying to resolve the relationship between autonomy and *responsibility*⁴⁹.

Garrison (2000) describes the development of 'autonomy' as a *central* concept in distance education. He points to the early work by Wedemeyer in the 1970's who proposed a move away from correspondence study to **independent** study (Garrison 2000: 17-19). "Independent" study, for Wedemeyer, described the *self*-determination of goals and activities. Peters, (the next major voice in the discourse on distance education) moved from a position in which he proposed an "industrial" model of distance education which reduced shared learning experiences and personal interactions to a position where he advocates for independent, self-study, "enhanced with social intercourse" in a "non-formal and individually controlled manner" (2000:25). The next important contribution in the field of distance education is considered the work by Holmberg whose central proposal was that distance education was a form of "guided didactic conversation". In the distance education environment, well-structured materials would simulate this 'conversation' (Garrison 2000: 28). The

⁴⁷ In the next key construct we will explore in detail the definition and scope of the notion of *habitus*.

⁴⁸ See for example Prinsloo (2003) for an exploration of the impact of habitus in the lives of some Unisa learners in a remote village in the Limpopo province, South Africa.

⁴⁹ Garrison (2000, ¶13-14) states that "[g]ood theory will reveal areas of inquiry and suggest potential hypotheses for the continued study and development of a field's theoretical foundation. ... New descriptions and interpretations of practice are necessitated by the evolving practice of the field. ... For this reason, we need theoretical constructs that are coherent and articulated but also flexible enough so as not to constrain critical and creative thought."

final voice in Garrison's overview of the development of the notion of student autonomy in distance education is the work by Moore (1993). Moore's central proposal regarding distance education is the notion of "transactional distance" which is firstly *pedagogical* and not necessarily *geographic* (in Garrison 2000:¶30-32). Within this notion of transactional distance, Moore then introduces the dimension of "learner autonomy" which he defines as "the extent to which in a programme the learner determines objectives, implementation procedures, and resources and evaluation" (in Garrison 2000: ¶31). Important to note that Moore introduces this dimension as one side of a continuum in which teacher control is on the other end of the continuum. Garrison (2000: ¶32) then points out that the "exact nature of the interrelationships among structure, dialog and autonomy is not clear". Garrison (2000: ¶32) proposes that "[f]uture work might focus on the interrelationship amongst the variables/concepts of dialogue, structure and autonomy"⁵⁰.

A *South African* distance education perspective on the scope of 'the autonomous learner' is strangely absent. The Council on Higher Education's (2004) report on the role distance education plays in South Africa is silent on the matter. Unisa's Tuition Policy (Unisa 2005) does not refer to the term. The Unisa ODL Policy (Unisa 2008c) also does not refer to either "autonomous" or "autonomy". Anecdotal evidence as well as research in the context of Unisa (eg Killen et al 2003; Sadler & Erasmus 2005) *do* however show that a specific understanding of the learner as "autonomous" play a *major* role in the way lecturers and students perceive their respective responsibilities in the teaching and learning space. This research as well as a recent Conversation Forum hosted by the DCLD (DCLD 2009) indicate that the popular understanding amongst academic staff regarding the definition of "autonomous" differs greatly from the definition in the 'foundational texts' of distance education⁵¹.

A possible way out of this conundrum is the fact that the National Qualification Framework (NQF) *does* provide guidance regarding the nature and scope of the autonomy of learning on every level of the NQF as contained in the Higher Education Quality Framework (HEQF) (<http://www.che.ac.za/documents/d000148/>) . It is however important to note that the NQF level descriptors were written for *both* residential and distance education institutions and that learner autonomy, in these contexts, show similarities⁵². These guidelines should also provide important guidance to Unisa in defining an institutional understanding of student autonomy.

Fenwick (2009: 105) questions the notion of individual autonomy due to "the intersubjective relationships that enmesh human beings with one another beyond their conscious intention or rational application of moral principles." My own provisos regarding her proposal have to do with the fear that the notion of *responsibility* then becomes *relative*, subjective and that it will become almost impossible to hold individuals accountable. Autonomy, as proposed by Fenwick (2009), and others, does *not* however imply that responsibility falls through the cracks of "intersubjective relationships". Within a framework where "events and actors are mutually dependent, [and] mutually constitutive" (Fenwick 2009:106) responsibility has a number of characteristics that addresses the fear of the implied relativity of situated autonomy. I would like to discuss two major pointers that may assist in clarifying our understanding of student's responsibility as situated agents and the responsibility of the situated institution.

⁵⁰ For a detailed discussion on Moore's proposal see Moore (1986).

⁵¹ Marsh, Richards and Smith (2001) explore the definition and interrelationship between autonomous learners and the learning society. They attempt to provide some systemic perspectives regarding student autonomy against the backdrop of lifelong learning and the role of higher education.

⁵² It will be worthwhile for Unisa to define its own notion of learner autonomy as distance education provider against the background of the NQF and distance education as discourse.

The first pointer is regarding *locus of control*. Locus of control is an element in defining the responsibility of students as situated agents/learners *and* the providing institution as a situated organisation. It refers, in commonsense terms, to those aspects of our lives and practices over which we have direct control and those over which we do not and which consequently shape our identity, attributes and outcomes. The significance of this notion for the model is that success is assumed to be the outcome of 'informed co-responsibility' (see below). The implication is that there are aspects over which both the student and the institution have, and do not have control. This is so both in relation to each other and to broader shaping social conditions. The model assumes, therefore, that success will occur when both the student and the institution makes appropriate changes in relation to those factors over which they have control. However the key point is that defining locus of control is a mutually informative and constitutive process.

With regard to the loci of control of students, research shows that locus of control is directly linked to students' self-efficacy, self-authoring, attribution of success and failure and perceptions of individual **deficiencies** and **potential** (see for example Pizzolato 2003, 2004, 2005; Simpson 2003). Locus of control has two dimensions namely having a realistic and critical understanding of the *parameters* of the locus of control and secondly, *assuming* control.

Students often over-assess their own abilities or capacities and often take on more than they actually have the capacity for (see for example Killen et al 2003; Martins 2006). The result of unrealistic expectations regarding course load, capabilities, etc *may therefore imply unrealistic assumptions of responsibility, and not unwillingness to assume responsibility*. Interventions such as suggested by Simpson (2003, 2006) and Prinsloo et al (2009) may actually assist students to have a more realistic picture of the scopes of their loci of control. A realistic scope of loci of control does not necessarily imply the assumption of control. Psychological theories on student **self-efficacy**, **autopoiesis** and **attribution** point out that students often have blurred perceptions of their loci of control as well as an unwillingness to assume responsibility for their actions and decisions.

It would therefore seem valid to state that although students' autonomy is situated, that they *do* of course have specific responsibilities in the learning contract and interactions with the institution. Specific interventions to clarify perceptions, expectations and loci of control can assist students to be empowered to become more effective (and responsible) agents.

The second pointer in the discussion of students' autonomy and responsibility is the overlap between students' autonomy and responsibility and the autonomy and responsibility of the providing institution. As Scott et al (2007) state, there are a number of factors impacting on student throughput over which institutions of higher learning have no control (see Scott et al 2007: 31-40). There are however a number of factors (see for example Scott et al 2007: 41-73) over which institutions and the higher education sector *have* control⁵³.

In concluding this brief and provoking exploration of autonomy and responsibility in the lives of students as situated agents, we would therefore like to propose the notion of **co-responsibility**. As indicated, success is the outcome of effective and appropriate co-responsibility. Co-responsibility needs however to be unravelled as the perceptions of students and lecturers in this regard often clutter appropriate and effective responses (see for example the discussion of Killen et al 2003).

⁵³ We will discuss the impact of the academic, operational and social dimensions of institutional habitus as Key Construct 3.

The student as situated agent questions the notion of a universalistic and normative understanding of autonomy. We therefore propose that this construct of the student as situated agent implies *situated relative autonomy and situated co-responsibility*.

4.7.2.2 CONSTRUCT 2: THE STUDENT HABITUS

Students act in dynamic interaction with their habitus. Our understanding of student **habitus** is crucial when thinking in terms of how students “fit” in higher education and how higher education and Unisa in particular “fit” the expectations of students. We often assume that students leave their pre-registration life worlds and that students are assimilated into the worlds of higher education (epistemologically and ontologically). While the first construct, the construct of the student as situated agent, allows us to engage with the student from a *sociological and psychological* perspective, this second construct explore the role and impacts of student habitus on throughput and success from a *socio-critical and cultural* lens. I acknowledge that these lenses are arbitrary and often overlapping.

We understand habitus as an attempt to describe the *situatedness* of students, not as static characteristic but a dynamic, changing dimension of *being* a student. Habitus has traditionally been understood to imply an individual’s dispositions and learned habits and non-discursive knowledges. In an early work, Bourdieu (1971) refers to habitus as “a system of lasting, transposable dispositions which, integrating past experiences, functions at every moment *as a matrix of perceptions, appreciations, and actions*” (Bourdieu 1971: 83). Bourdieu (1971, 1977) formulates the notion of habitus against the broader background of his proposal that inequality and class are socially produced and reproduced. Individuals’ patterns of behaviour and agency are therefore shaped by their location, whether socio-economically, geo-politically and/or culturally. Habitus, in this sense, therefore means that individuals at any point in time have certain epistemologies and a certain ways of *being* (ontology) shaped by their historical multidimensional location (see for example Bernstein 1977, 1996; Bourdieu & Passeron 1990). This totality, called habitus, as I understand it, describes the total integration of students’ personal and location-specific characteristics at any point in time. This “situatedness” or habitus does not presume a *static* condition but the individual as process⁵⁴. Bourdieu’s notion of habitus (if I understand him correctly) seems to correlate to the notion proposed by Habermas of “lifeworld”. Lifeworld, according to Habermas, “is his anme for the informal and unmarketised domains of social life: family and household, culture, political life outside of organised parties, mass media, voluntary organisations, and so on” (Finlayson 2005: 51). Finlayson (2005:51-52) states that lifeworld, according to Habermas refers to “unregulated spheres of sociality” which “provide a repository of shared meanings and understandings, and a social horizon for everyday encounters with other people.” Lifeworld therefore provides a context of action, social integration, and conditions for “critical reflection and possible disagreement” (Finlayson 2005:53). The lifeworld also “serves as medium for the transmission and improvement of all kinds of knowledge: technical, practical, scientific, and moral.”⁵⁵

The student habitus furthermore has two broad characteristics, namely aspects of the habitus that students have *no* control over (eg gender, race, parents, communities into which they were born, big seismic societal shifts; Gladwell 2008) and aspects of the habitus that students actually *have* control

⁵⁴ See the discussion of Makoe (2006) on an analysis of the role of habitus on some Unisa students.

⁵⁵ For an interesting discussion of the similarities and differences between the proposals of Bourdieu and Habermas see King (2000) and Tan and Sjoberg (2005). See also Habermas 1984, 1987. It falls outside the scope of this discussion document to explore the differences and similarities between the notions of habitus and lifeworld any further.

over (within different certain parameters of constraints). A number of sociologists have used the notions of **economic** and **cultural capital** (and other forms of capital -- see below) to illustrate the assets and the interactive “worth” and “currency” of an individual’s habitus⁵⁶. Depending on the individual’s gender, race, societal shifts, and so on, the individual will have a certain amount of economic and cultural capital (see for example the discussion in Kuh & Love 2000). From the moment of their birth, individuals as *situated* agents, start to negotiate and make choices, trading with their capital, resulting in an increase or decrease in their economic and cultural capital. Needless to say, how we define economic and cultural capital shaped by specific contexts and interests.

Having a degree, for example, will result in successful students increasing their **economic** and **cultural capital**. Depending whether the student can actually find employment as graduate, will be the litmus test for the cultural capital the student expected to gain from graduating. Students expect that registering for a degree and persisting often result in students’ access to continued supply in economic and cultural capital. A number of authors (eg Houtondji 2000; Scott et al 2007) have cautioned against the impact of the rising numbers of unemployed graduates. Though financial or economic factors do play a significant role in students’ decisions to dropout or stopout (see the discussion in St John et al 2000), their access to *cultural* capital (eg the symbolic value of being a student) has been under-researched and under-theorised (see Berger 2000).

Berger (2000: 98) points to the temptation to expand the notion of “capital” adding different other types of capital (outside or within the broad categories of economic and cultural) that flow from and impact on students’ habitus (eg artistic, intellectual, credentialised, etc). Increasing the list of types of capital will however erode the usability of the notion of “capital”. Berger (2000:98) quotes DiMaggio (1979) who said “[a]s the number of [types of] capital increases, the metaphorical currency undergoes inflation and its value declines accordingly.”

We acknowledge the danger of contributing to the inflation of the notion of “capital” by adding another type of capital, but I would like to highlight the specific *epistemological* aspect of students’ cultural capital as they engage with disciplines and higher education. These relate to the so-called academic literacies and numeracies, the acquisition of which constitute the foundational preconditions for successful higher education study. A number of authors have written on the impact of the difference between students’ cultural capital and the cultural capital expected from them and embodied by the institution of higher learning that they choose (see for example Berger 2000; Rendón et al 2000). The *epistemological* dimension of cultural capital describes the fact that higher education and different disciplines have particular epistemologies that often operate with different currencies than the currency in which students’ have **epistemological capital**. In the past universities assumed that, once students have graduated from high schools, these students will have an appropriate epistemological foundation on which higher education could then build. *We can no longer make this assumption* (see the discussion in Scott et al 2007: 44).

We do not want to remark on the “quality” or “relevance” of education students receive in their primary and secondary education. I *do* want to highlight the fact that students enter higher education with different (not necessarily of a lower quality) epistemologies. If I can expand on the notion of “capital,” I propose that students arrive in higher education with a different “currency” (as the money of a specific country in actual use) and amount of “dollars” or “Euros” and encounter that their currency is not accepted, validated and acknowledged by the institution. This often results in

⁵⁶ We acknowledge that the notion of “capital” is contentious, but as a construct that has certain legitimacy and value in the sociological discourse, we use the term cautiously and at times, with reserve.

anomie or alienation. Though Doll (1986, working in the field of curriculum theory) proposes that a certain amount of disequilibrium is vital in designing curricula and learning experiences, too much disequilibrium results in disengagement and anomie⁵⁷. This “loss of collective and individual security carries with it ... the constant threat of isolation as well as meaninglessness” (Richter, Van der Walt & Visser 2004:13)⁵⁸. The lack of having “sufficient” (according to the institution) or the right type of epistemological “capital” (currency) reminds us of the work done by Bernstein (1977) on the codification of disciplines and higher education⁵⁹. In concluding his discussion on the role of cultural capital on the success rate of students, Berger (2000:114) proposes that “[s]tudents with higher levels of cultural capital are more likely to persist, across all types of institutions, than are students with less access to cultural capital.”

An important element of capital relates to the range of **individual skills, attributes** and **attitudes** required for success in higher education. While these are clearly individual, they are also shaped by access to cultural and epistemological capital which fit the expectations of higher education study. The literature review has provided an extensive overview of a number of **pre-conditions** for success that can be located within the domain of the student habitus. These pre-conditions include inter alia individual, socio-economic factors and community and social networks.

- *Individual* factors include the genetic makeup of the individual, gender, whether the individual is the oldest or youngest, sense of self-worth and sense of entitlement, time management skills, literacies, numeracy skills, study skills, self regulating discipline, motivation, physical and psychological maturity and independence, parenthood, relationships with peers, family members, role models, significant others, etc. The individual factors also include values like honesty, responsibility, discipline, and drive towards a sense and definition of future.
- *Socio-economic factors* include financial security of the family household and studies, number of breadwinners, employment, number of dependents in the household, location in relation to broader support services and distance from the providing institution, etc.
- *Community and social network factors* include supportive or destructive networks and enclaves, the issue of first-generation higher education enrolment, expectations and support of the immediate community, possible networks for future employment, etc.

All of the above relate in some way or the other to the ontological dimension of *being* a student. Barnett (1996:73) writes that “...fulfilling the role of student is more demanding than ever.” The external demands on what competencies graduates should have often result in students feeling that “their becoming is not of their making” (Barnett 1996:73). Higher education further requires from students to name and re-name their worlds, a risk they are often not prepared to take (Barnett 1996:75). As students grow into being and becoming students, they often experience feelings of anomie and displacement, being in a “diaspora space” (Barnett 1996:80).

With educational displacement comes a trajectory. Trajectory carries the sense of velocity and direction and taking off. All these are present in student becoming. The student comes into the role of student by displacing herself into particular forms of interaction, inquiry and truth-telling (Barnett 1996:81).

⁵⁷ Also see the discussion on epistemic duties in the academic dimension of the institutional habitus.

⁵⁸ See also McQueen (2009) for a discussion on the importance of recognising the affective factors of *being* a student.

⁵⁹ See also Barnett (1996) for an exploration of the “diaspora” space students encounter in their trajectories of becoming and Prinsloo, Slade and Galpin (2007) for the functioning of the “diaspora” space in online learning.

Barnett (1996:81) further points out that the trajectory can either continue upward “with the student gaining more and more confidence, and acquiring more and more conceptual resource and veridical leverage”, or the trajectory can “fall away, with the student losing interest for some reason and failing to maintain her cognitive powers” (Barnett 1996:81). Higher education often presumes that students can fly under their own power. This flying solo has two dimensions namely

First, there is the coming into the formal structures of thought and understanding which mark out not just the territory but the ways of going on characteristic of the student’s field or discipline. Second, the becoming has a personal aspect. The student becomes herself in a new guise. The academic who is a physicist or who is a historian is so in a continuing sense: she defines herself as a physicist or a historian. Those descriptions – ‘physicist’/‘historian’ – describe persons. In coming to see the world as a physicist or a historian, the student is not alienated from herself but becomes that self more fully (Barnett 1996:82).

Barnett (1996:82-83) concludes that this “taking off is dangerous; if things go wrong, one is in rather an exposed position.” He points to three crucial dimensions of an ontological understanding of being a student:

- The notion of a student is a “multi-layered construction”
- The being of the student is achieved through a process of becoming a student
- In a definitive process of becoming, the student “constructs herself” in dynamic interrelations between epistemological and ontological dimensions of higher education (Barnett 1996:83).

Student habitus is therefore a powerful construct of interdependent and layered dispositions developed over years in interaction with the student’s environment, and their biographical and autobiographical characteristics. I firmly believe that higher education will understand student success and throughput better when understanding the different aspects of student habitus⁶⁰. When students register in higher education, their habitus engage with the *institutional* habitus, to which we now turn. The model assumes that success occurs when, through purposeful change in both student and institutional identity and attributes, a meaningful fit between student and institutional habitus arises.

The following is a hypothetical narrative, illustrating the dynamic and often unpredictable impact of student habitus on students’ choices, perceptions of control and self-efficacy and how the student habitus overlap with the institutional habitus.

⁶⁰ Although quantitative data harvesting and analysis can assist in understanding student habitus, Johnson (2000) point to the need for increased qualitative research, and specifically discourse analysis. He suggests exploring the “cognitive maps” of students paying attention to metaphors of alienation, centrality and marginality (Johnson Jr 2000: 166).

A student⁶¹ is born at a certain time and location, family and community context and to a certain extent, is the latest product of generations of choices and societal shifts that preceded her birth. Genetically she has a certain profile and the profile will be shaped through different societal shifts, family and community impact, pre-schooling, primary and secondary school experiences. She will grow up having access to certain economic and cultural capital. She enters the world however as agent and start trading in and with her economic and cultural capital from the early stages in her life. She will learn gender appropriate responses and ways of being. She will engage with peers and role-models. From very early on she will develop a sense of self-worth which is challenged, confirmed and/or shaped by different events. Her primary and secondary school experiences will provide her with basic competencies of being a South African citizen. In choosing her subjects early in her secondary school experience (often based and dependent on her options and exposure to options), she will already (to a certain extent) predetermine the choices she will have one day should she prefer to enrol in higher education. Depending on the quality of her secondary school experience, quality of teaching and learning, and role model she may choose not to take Mathematics, or Accounting Science. She may opt for Agriculture due to family and/or community pressure. She may opt to become an engineer, and not exactly know why. Depending on her exposure, role models and significant others, the stereotypes of professions on national television, she will make choices very early in her young adult life that will have major impacts on the rest of her scholastic and further education futures.

If she is one of the fortunate ones to complete her school years with university admission, she will register for a career based on the experiences, exposures, community and family input and bigger societal shifts in the prior eighteen years of her life. She will have academic or epistemological capital, but whether it is the same currency as the currency required by the disciplines she chose to enroll for, she would not necessarily know when enrolling. In the event that she is the first family member who enrolls in higher education, the hopes of the whole extended family and community will be on her to provide the type of seismic shift the family needs to put them on a different trajectory. They expect her to be successful in order to impact on the generations that would come after her. In being a “first generation student,” she follows many first generations that came before her, in different historical periods. The success to those “first” students relied on a number of factors, inter alia their self-efficacy and locus of control, their attribution, their experiences of anomie, the support they had from family and communities, the familiarity of the context and epistemologies these students encountered, their cultural and economic capital and a range of other interdependent variables.

Like many students that enrol in their first registration period, she will encounter the institutional habitus in all three its dimensions. Depending on her understanding of the requirements of the field she chooses the study, her understanding of the registration process, her understanding of the impact of the number of modules she chooses to take in her first semester of registration, the support and advice she receives from student advisors and administrative staff, and her successful negotiation of different parts of the registration process, she will, by the end of it all, *be* a Unisa student.

⁶¹ This hypothetical narrative refers to the student in the singular, knowing that the notion of a homogenous subject in the context of Unisa is impossible and irresponsible. There is no normative South African student. This narrative refers to this student as female in a specific socioeconomic class and background. If she had been male, her story would have unfolded differently. If she was of a different race, her trajectory, and her economic and cultural capital may have been differently. While this narrative attempts to portray a hypothetical student, we would like to acknowledge that the characterisation of this hypothetical student could be seen as stereotyping.

She returns to her family, friends and community with her Unisa student card, a number of pamphlets, some excitement and in anticipation for her study material to arrive. She managed to pay the minimum fee required for registration and reports to her support network that she is, in fact, registered. Depending on factors outside her and the providing institution's control, she may receive her study material after two weeks. Depending on her access to her postal address, she may receive the notice that her Unisa study material has arrived. Depending on her proximity to the postal office and whether she can collect her package often at the next weekend, she may have her study material. If she relies on the postal address of a family member, a church, a burial society, her mother's employer, or a friend's postal address, this process may be longer.

She has registered for four modules. The parcel she receives from Unisa contains a range of materials, including general advice, information on studying through ODL, procedures on how to access the library, a CD-Rom providing her with an overview of one of her courses, and then also a list of things that she has not yet received, but will receive in the near future. As she engages with the study package, she tries to separate the four different modules' materials. She tries to make sense of what else should be in the package but isn't. Depending on her self-efficacy, locus of control, support, peer, family and community support, she makes sense of the materials she has received. She discovers that she needs prescribed text books for three of the four modules. She has not budgeted for such an extra expense. She starts the process of negotiating with peers either to share prescribed text books if only she and they can find them. She tries to contact the regional library. The regional library only stocks a certain number of prescribed text books. If she gets hold of a copy, she can loan it only for two weeks. If she cannot get hold of a copy, she phones the main library on the Pretoria campus. If she gets through, she is requested to fill in a "request card" and post it to the library. She is also advised that a quicker way may be to register on *myUnisa* and have electronic access to the library.

As she tries to keep track of her finding the correct prescribed text books, her levels of anxiety increase. She engages with the study material and experiences some content accessible and other contents just very difficult to engage with. She has not fully engaged with the Tutorial Letter 101 of each module and only realises a week before the time that the first assignments has to be in. It is her first experience with a multiple choice mark reading card. It looks like an expanded version of a Lotto card. In the one module she works with another Unisa student in the same community. With the other three modules she has to make sense on her own.

And so her learning journey unfolds in a 14 week tuition and learning cycle. She realises that she took too many courses. Her partner leaves her. She finds temporary employment and her time available for study becomes less. There is an election coming and her community is tense with vigilante groups prowling the streets. She has to cancel attending the tutorials because of her temporary employment. She gets feedback on her assignment in one module and the lecturer or marker failed her with no feedback. The feedback will be sent in a tutorial letter. By the time this arrives, she no longer has the time to go back to this assignment. Another assignment in a different module comes back, a pass, this time. The written feedback however prompts her to engage more. She feels less alienated. She decides to cancel one module. She is told it is too late to cancel and get some refund. She cancels anyway. The module in which she just could not find the prescribed text book collects dust in the corner. With two weeks to go before the exam is written, she has to find a new place to stay. She gets promotion. She gets sick. She falls in love. She writes only one module. She passes. She reregisters. She gets promotion. She gets married. She discontinues her studies. She opens her own business. She opens a hospice for HIV/Aids and cancer patients in her local community. Higher education calls her a dropout. She is nominated for the Community Woman of the year award. She is seen as a role model for others. In higher education she is a statistic on some table on a cohort study on student throughput and success.

The above example of a student's walk could have unfolded in different ways. She could have been male. She could have been in Pretoria Girls High and fully prepared for higher education. She could have been many things. Her journey could have had 250 000 different outcomes.

Unisa, as higher education institution, has a specific habitus. The institutional habitus shapes and impacts on the identity of the institution, how it perceives its mandate and how it operates. Just like individual students, institutions understand their loci of control in different ways. There are a number of things institutions of higher learning don't have control over. There are also a number of things they *do* have control over. The scope of their loci of control impacts on their interpretation of their mandate and their responsibilities. Institutions teaching, learning and assessment strategies are furthermore shaped by assumptions and perceptions regarding students' access to resources, students' understanding of and commitment to the learning contract. The narrative above illustrates an individual student's habitus that shows, at times, remarkable resemblance to the role and impact of the habitus of the institution on its identity, perceptions, organisation and mandate.

4.7.2.3 CONSTRUCT 3: THE INSTITUTIONAL HABITUS

The institutional habitus (like student habitus) is a collective notion consisting of physical, psychological, socio-economical and cultural traits, habits, and rituals of institutions. I distinguish between three different "domains" or "clusters of traits" within the institutional habitus namely the academic, operational and social aspects of institutional habitus. The concept of institutional habitus is an important concept when student **integration, assimilation, adaptation** are explored as factors impeding on student success. **Integration** refers to the extent to which students are integrated into the institutional and epistemological cultures of the providing institution. In traditional models on student throughput, integration is core to understanding and predicting student throughput and success. A number of authors (eg Braxton & Lien 2000; McQueen 2009; Rendón et al 2000) have questioned the norms according to which students' integration were measured and valued. Institutional habitus as a concept also allows for a critical heuristic in designing appropriate and effective institutional interventions (see for example Zepke & Leach 2005). **Assimilation** is often regarded as the norm referring to the extent to which students are integrated into the host institution. Assimilation refers to the fact that students are often required to discard their previous epistemologies and even identities in order to integrate successfully into the culture and epistemology of the providing institution. Assimilation as norm for student integration is critiqued by a number of authors, inter alia Rendón et al 2000; Tierney 2000). **Adaptation** refers to the way institutions adapt to the increasing diversity of their student bodies. While integration and assimilation refer to students' (perceived) responsibility, adaptation refers to measures and strategies the providing institution implements to address student expectation, diversity and output more efficiently (see for example the discussion in Scott et al 2007; and Zepke & Leach 2005). Thomas (2002:431) states that institutional habitus "should be understood as *more* than the culture of the educational institution; it refers to relational issues and priorities, which are deeply embedded, and sub-consciously informing practice" (italics added). Although institutional habitus is an accepted notion in the literature on student throughput and success, the analyses of the exact nature of institutional habitus differs between authors. Thomas (2002:432-438), for example, lists two "layers" of institutional habitus namely

- The *academic* experience: attitudes of staff, teaching and learning and assessment
- The *social* experience: friendship, mutual support and social networks

Berger (2000:110) proposes understanding institutional habitus as *three* different subsystems namely academic, social, and organisational. Berger states

[t]he more congruent a student's habitus is with the organisational habitus as it is manifested through these subsystems, the more apt the student is to perceive them as a source of support. In contrast, less congruence might lead to a perception of the subsystems as too challenging (2000:110).

We are of the opinion that **institutional habitus** is a crucial concept in the context of distance education. The operationality of *being* a distance education institution is core to students' experiences of their learning and impact on their motivation, their sense of control as well as their chances of success. I would therefore like to propose institutional habitus as containing *three* different, but overlapping, dimensions namely *academic, operational* and *social*.

4.7.2.3.1 ACADEMIC

In the academic aspect of institutional habitus we will focus primarily on the relationship between the epistemological and ontological dimensions of teaching and learning and the impact of the codification of disciplinary knowledge on teaching and learning.

The academic aspect of institutional habitus is primarily a combination of *epistemological* and *ontological* dimensions. Enrolling in higher education is often understood to only concern encountering *knowledge*. Different authors (see for example Barnett 1996; Dall'Alba 2005; Dall'Alba & Barnacle 2007; McQueen 2009) have pointed to the fact that although discipline knowledge is an important dimension of being a student, that *being* a student also has an often neglected dimension, namely an *ontological* dimension (as explored in the section dealing with the student habitus). In the ontological dimension of teaching we are firstly concerned with the way educators in higher education see themselves in their *being* educators. The self-sense of being an educator relates to how they understand *knowledge* (Dall'Alba 2005:366). Some educators see teaching and learning as "knowledge transfer and acquisition, in which authoritative knowledge is transferred or acquired while remaining unchanged" (Dall'Alba 2005:363). If "knowing is not exclusively cognitive, but is created, enacted and embodied", then knowing is not "simply something we possess, but who we are" (Dall'Alba 2005:363).

Dall-Alba continues

These pluralist, contextualised, active, ontological qualities of knowing mean that I, as university teacher, cannot simply transfer knowledge about teaching [in the context of teaching prospective teachers] to course participants. Instead, they create, enact and embody the knowledges they encounter through the course to varying extents and a range of ways, both individual and shared (2005:364).

The ontological dimension of teaching is therefore an important aspect of the student throughput and success puzzle. It touches on the way educators see themselves and their students. Often student throughput discourses only deal with student habitus and forget the habitus of *being* a lecturer. Learning, especially in ODL and with the opportunities of open sourcing, is transformed into a collaborative process affecting the way we see knowledge as well as the way we see teaching and

learning. Our ontologies as educators therefore impact and flow from our views of knowledge (our epistemologies) and shape the way and rationale of our teaching (our pedagogies)⁶².

We now turn to the second dimension of the academic habitus namely the codification of discipline knowledge.

Barnett (1996:76) speaks about the epistemological naiveté of students when they enrol in higher education. In discussing the student habitus in the previous section, we have already explored the epistemological distance students experience when they encounter discipline knowledge. Various authors have written on the impact of the epistemological distance between students and the disciplines (see for example Scott et al 2007; Kuh & Love 2000). Often, the disciplines are unaware of their own epistemological assumptions and “codes”, making it even more difficult for them to understand why students fail or have difficulty understanding their field (see for example Bernstein 1977, 1996). Disciplines also do not understand the epistemologies that *students* have when they enrol. This interaction between different epistemologies, those of students and those of the disciplines, is often littered with accusations of “lack of academic literacy”, “the dumbing down of curricula” and of “eurocentricism”.

Scott et al (2007: 48-56) therefore provide a strong rationale for the reform of curriculum frameworks. The discussion on epistemological capital and currency in the section dealing with the student habitus has pointed to the impact of the academic habitus on students’ chances of success. *It is important to note that I do not propose a lowering of standards and academic integrity.* I do propose that disciplines often don’t understand the restrictive and possibly exclusive (and hidden) codes in which the disciplines were founded and grown. Those on the inside of the disciplines find it difficult to understand how these on the outside of the disciplines don’t understand. Berger (2000:222) proposes that academia should *not* lower their expectations and standards in an attempt to address the difficulties students face when challenged with the epistemologies inherent in the disciplines. As opposed to lowering of expectations, Berger (2000:222) quotes Steele (1997) who suggests “[g]iving challenging work to students conveys respect for their potential and this shows that they are not regarded through the lens of an ability-demeaning stereotype.” The challenge for higher education is to respond to the *potential* of students and not their academic or epistemological capital (Berger 2000:222).

It falls outside the scope of this document to resolve the epistemological dilemmas inherent in the overlap between students’ epistemological capital and the epistemological codes of higher education disciplines and inter-and intra-disciplinarity. A possible way out of the dilemmas of this “gap” between the epistemologies of students and disciplines, would be to explore the notions of epistemic responsibilities and duties. For example, Habermas (2006) in the context of inter-religious dialogue, proposes certain provisions for crossing the inter-religious communication divide. Amongst his proposals are an epistemic self-reflection on all sides of the communicative continuum, acknowledgement of the cognitive dissonance, and a commitment to fulfil an “epistemic duty” to translate beliefs into a vernacular that can be understood by other parties to the conversation (Habermas in Mendieta 2005:329)⁶³

Another aspect of solving the seemingly epistemological impasse in higher education is proposed by Scott et al (2007: 42-50). Scott et al (2007:42) firstly acknowledges the epistemological impasse and refer to the lack of articulation between secondary school education and higher education. Scott et

⁶² Also see the discussion by Freire (1973, 1989) on different roles educators play in “banking education” compared with “transformative education”.

⁶³ See also Habermas (2006) and Ens (2007) on the “rules of engagement” between religions.

al (2007:43) proposes a strategy that includes a two-pronged approach. These authors propose extended curriculum programmes to include foundational provision. While pointing out that traditional curricula have not started to question the “prior learning and educational ‘capital’ on which our traditional curricula are based”, Scott et al (2007:44) acknowledge that the underpreparedness associated with “disadvantaged educational backgrounds often involves a complex of factors such as conceptual development, academic language proficiency and approach to learning, as well as subject knowledge.”

The construction and scope of curriculum design therefore fulfils a major point to consider as higher education contemplates appropriate responses to student throughput and success. Scott et al (2007:45) propose “[t]o allow for a steady increase in the intellectual demands on students coming from different starting points, the structure of the curriculum also needs to be flexible enough to accommodate differentials in the pace of progression.” It is important to emphasise that “[*e]xit standards cannot be compromised, and must be demonstrably the same for all students achieving the qualification concerned*” (Scott et al 2007:46; italics added).

The success of Unisa’s tracking system to predict and support student learning will, amongst other risk factors, also depend on disciplines, and even those involved in multi-, inter- and transdisciplinary discourses to critically interrogate the codification of their fields and the epistemological capital that is required from students in order to negotiate meaning successfully. As Scott et al (2007:46) emphasised, the exit standards of the qualifications are non-negotiable. What is negotiable is the relevance, pace and openness of curricula to make space for different epistemologies and ways of thinking *without* compromising exit outcomes⁶⁴.

In the discussion on the student habitus, we alluded to the fact that a number of predispositions for success could be located in the student habitus. The same applies in the academic dimension of the institutional habitus. Predispositions for ensuring the success of teaching and learning include, amongst other aspects

- Lecturers academic integrity in a particular discipline or field
- A very specific and informed, critical understanding of ODL and the diversity of students
- Self-awareness regarding the threshold concepts in the field taught. A **threshold concept** is a “tipping point” in the curriculum which, if students do not sufficiently master this aspect, they will not be able to complete the rest of their journey (see for example Davis & Mangan 2007; Meyer & Land 2005).
- The self-discipline, self-efficacy and loci of control of lecturers to balance the increasing emphasis on research, performativity, community engagement and teaching.
- Departmental and institutional staffing policies and procedures
- Continuing professional development and growth

The above list is anything but comprehensive, but point to the types of predispositions that we should consider in the conceptual model.

⁶⁴ The extent to which current exit outcomes were phrased taking into account the shift in international education from epistemologically driven to an emphasis on ontological dimensions of being engineers, accountants, etc is open for questioning.

4.7.2.3.2 OPERATIONAL

The *operational* habitus is a collective descriptor of the dispositions embedded in the operationality of Unisa, like the admission requirements, mode of delivery, tuition model, and so on. Decisions regarding modes of delivery, the tuition model and admission requirements, student support and a range of other functional or operational issues impact on students' choices and at the end, their chances of being successful. The operational habitus is something that students don't have any control over except insofar as they can raise complaints and queries to highlight experienced problems. *Interestingly, as the examples will illustrate, factors outside of the institution's locus of control also (often) shape and impact on the operational habitus of the institution, notably the efficiency of outsourced services.* The following are examples of how the operational habitus affects student choices and success⁶⁵:

- Unisa's tuition model proposes a 14 week tuition model in which students will have received their study materials in time, have completed two assignments and have successfully prepared for the examination. The diversity of the changed and changing profile of Unisa's students impact on the extent to which a 14 week tuition period may fit the dynamic and unpredictable interplay between the different dimensions of students' personal, community and professional lives. Although students are advised on the amount of hours required per module, most students underestimate the amount of time required to obtain the prescribed text book, participate in online communities, complete multiple assignments and prepare for the examination. A 14 week tuition model furthermore does not allow much space for neither operational lapses (study material not sent out in time, delayed response to student inquiries, etc) nor personal crises students' may encounter. Despite agreements between Unisa and the national Post Office, students' access to effective and trustworthy postal delivery is crucial in a 14 week tuition period.
- Although online access to study materials and learning experiences are encouraged, Unisa's tuition model relies, mainly, on *printed* materials and students receiving these materials in the post. At present there is no evidence regarding the *nature* of students' access to postal addresses they provided. From anecdotal evidence, it would seem that the number of students relying on receiving their post at postal addresses belonging to employers, employers of friends, community organisations, extended family members, etc. may be bigger than Unisa assumes. Should students *not* have weekly access to their postal addresses it may impact severely on their chances of success.
- Unisa is the only dedicated, comprehensive higher education provider in South Africa. Unisa may not necessarily be students' first choice, but due to admission requirements at other higher education institutions, personal circumstances (e.g. employment, finances, etc) or choice of academic offering, students choose Unisa as provider. Many students are not sufficiently prepared for studying in an ODL context. The diversity of Unisa's student profile also results in a diversity of needs and expectations. Many students specifically choose Unisa because of the independence such a mode of delivery offers them to continue with their professional and personal lives. Many of these students cope well and require little from the institution outside professional and timely responses to their (mostly) administrative inquiries. A large percentage of Unisa's students however requires a range of support services ranging from personal counselling to academic support.

⁶⁵ The important point with regard to these examples is *not* to evaluate the decision as good or bad, but to emphasise the impact the decision has on students' chances of success.

At present Unisa does not differentiate between students' needs and expectations but render a service that could be described as a "one size fits all". Many of Unisa's students cannot cope with balancing workload and personal/professional lives and/or are not sufficiently prepared to engage with either ODL or discipline specific epistemologies. Unisa's conceptual model and tracking system should allow for students to make more responsible choices and for Unisa to offer timely, professional and appropriate support to students.

The predispositions for success in teaching and learning located in the operational dimension of institutional habitus almost speak for itself. Suffice to point out the following predispositions as possibilities to consider:

- Efficient and professional conduct by all staff handling student inquiries
- Efficient, timely and reliable delivery partners and processes
- A teaching and delivery model that takes seriously the diversity of the Unisa student profile
- A succinct understanding of the diverse dimensions of the student habitus
- The implementation of ODL at Unisa rests on an integrated system. At present the fragmentation of different parts and layers of Unisa not knowing what the other parts do or plan impact negatively on student throughput and result in a culture of blaming. Different departments and functional layers within Unisa as ODL institution needs to have clearly demarcated loci of control and a critical and shared understanding of possible overlaps.
- Outsourcing essential services in the operational domain of Unisa is a contentious issue. The final responsibility for the outsourcing does not lie in the provider of the outsourced services but with the institution.

4.7.2.3.3 SOCIAL

The social aspect of institutional habitus in a distance education environment challenges conventional research regarding the "social" integration of students. The appropriateness of research on social integration to the Unisa context is questionable due to the fact that much of the research was done in residential settings with traditional student profiles, mostly in North American and European contexts. Social integration in these contexts investigated the extent to which students identify with the social cultures of the campuses and residences. Social integration reflected the extent to which students are involved in student activities including student unions, sport and cultural activities. Zepke and Leach (2005: 52) interestingly report "students who indicated high levels of integration tended to have lower grade point averages." Kember (1989) has furthermore questioned the appropriateness of models designed in residential settings to the complex and highly differentiated contexts of distance education. A number of recent theoretical developments have also questioned traditional propositions of the role and content of integration in traditional models on student retention and throughput (see for example the work by Rendón et al 2000).

Kember (2001:329), reflecting on the role of social integration of part-time students, notes that the "literature on student drop-out has consistently maintained that commuter students will find it harder to become integrated into college society than students living in halls of residence as they do not experience the socializing influence of campus life." It is important to note that when Kember explores the notion of social integration of part-time students, that his findings are specifically focused on *part-time* students in a residential campus setting. It is a given that part-time students will feel alienated in a residential setting when they compare their own "integration" with that of traditional residential students.

Except for the fact that theorising on the social aspect of institutional habitus is almost exclusively reflecting residential settings, studies also focus on the social integration of groups of *minority*

students. Although these studies do provide interesting and important pointers regarding understanding the social dimension of institutional habitus, it is important to note that definitions of minority students in the North American and European contexts compare well with the profile of the *majority* of students in the Unisa context. Our discussion regarding the epistemological capital required in the context of the institutional habitus may however indicate that the epistemological foundations and unfolding of many disciplines within the context of Unisa is still very Eurocentric. This will then result in the interesting dilemma that the majority of students would still encounter difficulties in trying to access epistemologies governed by minority views.

The social dimension of institutional habitus is constituted by diverse and multi-layered cultural assumptions, micro-politics, power relations, institutional and sub-institutional culture and practices. At present there is reason to believe that Unisa may benefit immensely from systematic introspection in which obstacles to student success in the cultural domain of *being* Unisa are identified and addressed.

4.7.2.4 CONSTRUCT 4: THE DYNAMIC NATURE OF THE STUDENT WALK

While the previous three constructs present their own challenges for a formulation of a conceptual model, this fourth construct underlines the immensity of any project attempting to understand (and predict) student throughput and success. The previous three constructs meet where the student as situated agent, within the context of his or her personal habitus and within the inter-and intra-personal dimensions of this, engages with the three domains of the institutional habitus. The number of variables and interdependencies increase in complexity and scale.

The student walk encompasses *everything* from the moment students contemplate enrolling in higher education and choosing a career, to their initial inquiries and choice of an institution of higher learning, through the preregistration and registration process, the tuition and assessment cycle, to the eventual event of graduation and employment. As such the student walk therefore encompasses a dynamic phenomenon which resembles a complex and adaptive system where “events and actors are mutually dependent, mutually constitutive, and actually emerge together in dynamic structures” (Fenwick 2009:106). Fenwick continues to describe such a complex and dynamic system as follows:

No clear lines of causation can be traced from these interactions to their outcomes, because at any given time among all these interconnections possibilities are contained in the system that are not visible or realised. This means, among other things, that humans are fully nested within and interconnected with many elements of the systems comprising them and in which they participate. They are not considered to be autonomous, sovereign agents to whom responsibility can be attributed or extracted.

In such a dynamic and complex system, as one variable change (eg a choice a student makes, or an assignment which gets lost), this act (or non-act) “excites responses and changes in the structural dynamics of the other, which couple with and alter the elements engaging with it in a new unity” (Fenwick 2009:106). Understanding the student walk as such a recursive process of emergence in which different constructs interact dynamically and in a non-linear fashion, necessitates an understanding that the “result” of these dynamic interactions “exceed their parts” (Fenwick 2009:106). Hence, even if we can list all the variables in these constructs, the “result” of an event or choice (independent of the origin of the action) leads to recursive and emergent processes very difficult to predict.

Davis and Sumara (2005:309) describe the effect of these individual actions as follows:

At each stage in a recursive processes, the starting point is the output of the preceding iteration, and the output is the starting point of the subsequent iteration. Every stage, that is, is an elaboration, and such elaborations can quickly give rise to unexpected forms and surprising complexity. The sorts of recursive functions that are used to generate fractals are also non-compressible. There are no shortcuts to their final products. A person interested in the eventual product of a fractal-generating function must allow it to unfold.

If we understand the student walk as a complex and dynamic, recursive process, the focus is not necessarily on “isolated actors and objects foregrounded against some contextual backdrop, but on the dynamic, nonlinear actions and connections flowing between all these parts” (Fenwick 2009:107). “Uncertainty and disequilibrium become structural principles in which actions, choices and meanings emerge as unpredictable” (Fenwick 2009:107).

The implications of understanding student throughput and success from a complexity science background are immense, and almost discouraging. Fenwick (2009:107) states “[t]his fundamental property of uncertainty naturally poses challenges for educational planning, governance, application of routines or laws including ethical laws, and issues of accountability and responsibility.”

We propose that understanding the student walk as a dynamic, emerging, dynamic, non-linear process as proposed by a number of authors (e.g. Fenwick 2009; Davis & Sumara 2005) has a number of implications for Unisa’s conceptual model:

- The need for *adaptive change*. The conceptual model should provide a rich and clear enough foundation to design a tracking system which will start to trace emerging patterns. The conceptual model will require accepting ambiguity and uncertainty as central to its design. It is crucial to determine what is knowable and predictable within this context of understanding the events and actors as “mutually dependent” and “mutually constitutive” (Fenwick 2009:106). In determining the knowable and the predictable, it will be important to continuously think in terms of “risks” (to the student’s success and to the sustainability and integrity of the institution) and “opportunities.”
- The importance of *relationships*. Understanding the student walk as a non-linear unfolding and emergent process necessitates exploring the relationships between different variables at specific moments of the student walk, rather than making grandiose statements on specific variables out of context.

Understanding the student walk from a complexity perspective also has implications for the design of effective and appropriate institutional- and students’ responses resulting from the tracking system.

4.7.2.5 CONSTRUCT 5: A BROAD DEFINITION OF “SUCCESS”

When will a student be successful? The answer to this seemingly simple question is much more complex than is, at first glance, apparent. The answer to this question furthermore illustrates the situatedness and embeddedness of the question on student throughput and success.

Student success may be defined from a higher education policy framework which implies “success” as graduate throughput. Student success may also be defined from an employer perspective which would require students to be ready and competent to assume their places in places of work. The same question can (and should) also be raised from the perspective of broader society. What does the broader South African and increasingly globalising society expect of graduates, institutions of higher learning and students-while-studying? In this regard, the notions of success and effectiveness are inextricably linked. Finally, an important (often missed) point in the debate on student success, are the views of students *themselves*. When do students consider themselves to be successful? When they graduate? When they pass individual courses even if they never graduate? When they

decide to deregister due to assuming different private and professional roles, do they consider themselves to be “dropouts”?

In the literature review we referred to the work by Woodley (2004) who points to the fact that in an ODL context, students no longer register for a particular qualification or programme, so anything like a graduation rate is impossible to calculate; that students can leave with interim qualifications such as certificates, diplomas or just course credits and be “successful” in their own terms; that students can transfer to other institutions to complete their learning and that, especially in ODL, students can take as many years off as they like.

Underscoring the definition of student success is a question of “fit”. Institutions of higher learning consider students successful when these students “fit” into the institution, the academic discourses and culture of the institution. Employers may consider students to be successful if these students “fit” into prescribed roles in places of work. Often students, who dropped out or deregistered, state that they just did not “fit” – whether in the particular course, or institution or culture. Therefore the notion of “fit” does provide an interesting dimension to our construct of student success. “Fit” implies the extent to which students experienced integration, whether integration in the institutional culture, the academic discourses or envisaged place of work.

Many authors address students’ integration into the institution as *the* key determinant of their success or decisions to leave. Tinto (1975) and Spady’s (1970) models have been designed with “integration” as the major heuristic device. I support the notion that student “integration” plays a major determining role in understanding student success, with a proviso, namely that “integration” is understood as a multidimensional and dynamic phenomenon in which “events and actors are mutually dependent, mutually constitutive” (Fenwick 2009:106). Let me firstly clarify what I don’t mean by “integration”.

In traditional models on student retention and success, “integration” is understood to mean that students accept the responsibility to be induced, and integrated into the institution. *Students* should abide by the rules and accept responsibilities inherent in registering in higher education. Often, as many authors have shown, this notion of integration actually meant that students had to be assimilated into an institutional culture and discipline discourses leaving their original cultures and ways of knowing behind (see for example works by Berger, 2000; Rendón, Jalomo & Nora 2000; Tierney 2000; Zepke & Leach 2005). Students were considered to be successful depending on the way and extent to which they became inculturated into the institutional culture, epistemologies and ontology. Zepke and Leach (2005:52) propose that assimilationist approaches “may not be the most appropriate for attrition research.” Tierney (2000:219) suggests

Rather than a model that assumes that students must fit into what is often an alien culture and that they leave their own cultures, I argue the opposite. The challenge is to develop ways in which an individual’s identity is affirmed, honored, and incorporated into the organization’s culture.

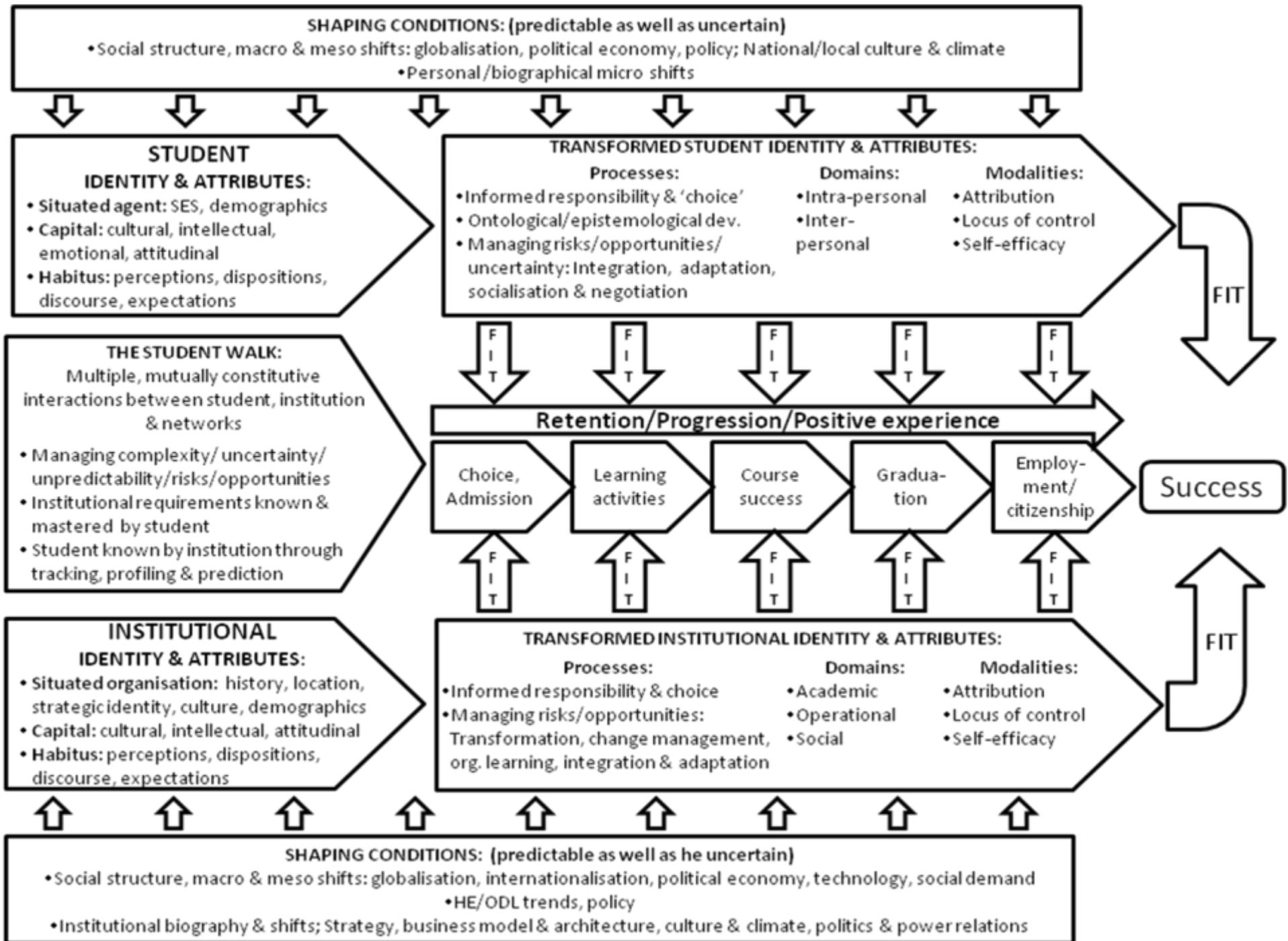
Central to the notion of “fit” are perceptions, expectations and assumptions by students and the institution. Our proposal for a conceptual model proposes that *both* main stakeholders in the teaching and learning context, namely students and institution, have specific and shared responsibilities in order to ensure a “fit”. I agree with Zepke and Leach (2005:54) who state that

Central to the emerging discourse is the idea that students should maintain their identity in their culture of origin, retain their social networks outside the institution, have their cultural capital valued by the institution and experience learning that fits with their preferences.

This conceptual model is based on making more overt the respective responsibilities of students and institution alike. A basic assumption of this proposition is that the notion of responsibility is based on agreeing on the parameters of the loci of control of both students and the institution. Fit, and therefore success, is the result of successful mutual adaptations and the effective execution of informed co-responsibilities.

4.7.3 THE CONCEPTUAL MODEL

Drawing from the literature review and from the key constructs set out above, the conceptual model is now presented. This is done in the form of several propositions which explicate the elements of the model and their relationships. Where appropriate, the propositions are elaborated. Further, performance/success indicators, drivers, preconditions and predictors are identified, and key terms are defined. A high-level graphic representation of the model is provided in the figure below.



Proposition 1

Student success is broadly interpreted and indicated by retention, progression through the main phases of the student walk, and ultimately successful graduation and effective entry into the labour market and/or citizenship. Success also incorporates a positive student experience as a result of student-centred service excellence and efficient operations provided by the institution.

The broad notion of student success relates to all aspects of the student walk, from initial pre-registration engagement with the student through marketing, counselling and his/her perceptions of the institution and its nature and reputation right through to employment and citizenship. Success in relation to the latter involves fit between graduate attributes or "graduateness" and labour market requirements and the demands of active, critical citizenship and democratic agency. Success, in this sense, is equivalent to effectiveness. In addition, as indicated, success not only involves retention, progression and graduation, but also a positive student experience in relation to all aspects of the student walk. It is therefore not only about reaching each point in the journey towards the final destination, it is also about the quality of experience throughout.

Consequently, the student walk starts much earlier than we ordinarily presume. We have little control over the pre-registration phase. Students' habitus and their access to economic and cultural capital as well as the impact of their economic and cultural capital on their choices, scope of their options, their sense of self-efficacy, attribution, anomie, are important factors to take into account in understanding the student throughput puzzle. On the one hand, *Unisa* needs more actionable intelligence regarding our students' *prior*-registration lifeworlds. On the other, *Students* need to have greater and more critical understanding of their own habitus and how it shapes and will shape their options and their engagement in higher education.

Student success is on the one hand an intensely personal notion where students may consider themselves successful even if they did not complete their qualifications. On the other hand, formal success remains the fundamental benchmark. In this regard, Woodley (2004) warns against pathologising student throughput in distance education.

Proposition 2

Student success and positive experience is the outcome of sufficient fit between the identity and attributes of the student and the institution through all phases of student walk.

- a) Identity: Student and institutional identity are regarded as situated in and, in part, constituted and constructed in relation to overarching social structural conditions and, in part, through agency.
 - With regard to the student, identity is indicated by past and current social and economic status and circumstances and demographic variables. A key assumption about student identity is its complexity and heterogeneity in the Unisa context. This diversity implies inter alia that the life circumstances, expectations, competencies and demands of students have become even more varied than before. Some students can cope with the demands of ODL and have specifically chosen to study through this mode because of the relative freedom it offers. This freedom implies the option to remain employed while studying, freedom of location and freedom to combine complex life circumstances with studying. Students choosing Unisa because of its ODL character often voice their need for independence, very little support, extensive feedback and professional and efficient administrative support (DCLD Report 2009). Students opting for studying through Unisa but who would have preferred to study full-time at a residential higher education institution have different needs, expectations and loci of control. They often request face-to-face sessions with

lecturers and/or tutors, more interaction with peers, and have difficulty coping in the rather unstructured, self-dependent mode of study (DCLD Report 2009). In the light of this diversity, it is impossible to generalise a notion of "the Unisa student".

- Regarding the institution, identity is shaped by history, location, strategic identity, culture and demographics. Both individual and institutional-level identity and attributes are subject to and shaped by the various changing macro, meso and micro-level shaping conditions, some of which are predictable and some uncertain (see below).

b) Attributes: This includes capital and habitus.

- At the individual level, capital includes cultural, intellectual, emotional and attitudinal dimensions. Intellectual capital incorporates the academic literacies and conceptual skills required for higher learning. Significantly, a key element of the model is that the other forms of capital are equally important preconditions for successful negotiation of the challenges facing distance education students.
- At the institutional level, forms of capital or capacity also apply in relation to cultural, paid intellectual, organisational and attitudinal dimensions.
- Addressing student throughput and success is not only about addressing the deficiencies students *and* the institution may have, but also to establish, validate *and* celebrate the assets, positive capital and potential of students *and* the institution.
- Likewise, at the institutional and individual levels, the notion of habitus applies. This relates to the complex web of perceptions, assumptions, values, practices, discourses and expectations that frame and mediate our situated identities and attributes.

Proposition 3

Fit arises when elements of the student and institutional identity and attributes (capital and habitus) are optimally aligned at each successive stage of the student walk. Fit at these various points is the outcome of the following individual student and institutional preconditions:

- a) The student enjoys a conducive past and current social and economic status and circumstances in order to successfully undertake higher learning. This is indicated by:
- Sufficient freedom, time, space and opportunity in relation to current domestic, financial and employment status, conditions and responsibilities in order to allow effective study and interactions.
 - Interactions occur between student and institution, other students and significant networks.
 - Actual and virtual networks consist of immediate and extended family, actual and virtual peers, role models, local communities, and occupational, cultural, faith-based, social and recreational organisations.
 - Adequate and timely interactive access to and effective utilisation of academic and operational institutional services, including study materials, library and information sources, academic and pastoral learner support and counselling in order to enhance individual capital.
 - Adequate access to an effective interaction with other students and the community of scholars in order to enhance individual capital.
 - Sufficient individual health, safety and well-being among the student, and his/her immediate and extended family, communities and networks.

Drivers and predictors include:

- Demographics: race, gender, age, location, marital status, socio-economic status (family income, employment & educational background and status)
- Attitudes to life issues of identity formation, sex, alcohol, drugs, and so on and in particular the role and meaning of higher education within this
- Extent of positive or negative influence, support, expectations and encouragement in significant networks, especially role models.

b) The student has transformed his/her habitus where required and has acquired sufficient cultural, intellectual, emotional and attitudinal capital to be deemed prepared for higher education study. This is indicated by:

- Sufficient actual and potential academic literacies and numeracies, conceptual skills and vocabulary, with potential identified by means of appropriate instruments
- Language skills
- Adequate understanding and successful adaptation and integration into academic and operational requirements, expectations and practices
- Consequently, individual habitus aligned to institutional requirements, expectations and practices
- Positive attitudes: motivation, focus, perceptions, expectations, energy, drive, self-discipline and persistence
- Study habits and skills: reading patterns, time management, organisation, concentration
- Self-efficacy: confidence and positive self-construction in relation to institutional requirements, expectations and practices

In addition to those identified above, likely additional shapers and predictors include:

- Educational background & outcomes (quality of teaching and learning environment)
- Learning style

c) The institution provides high-quality, effective, relevant and efficient academic and operational services, informed by and aligned to student profile, identity and attributes. This includes:

- Academic policies and practices: pre-admission counselling and guidance, admissions (including appropriate assessment of academic and socio-economic potential and risk), teaching and learning (curriculum development, study material development, assessment), proactive academic and non-academic learner support (library services, access to academics, tutors and peers, tutorials and counselling)
- Academic offerings: Relevant PQM with differentiation and articulation opportunities appropriate to a comprehensive distance learning institution
- Operational policies and practices: especially regarding primary student support services including marketing, career and counselling services, admissions, registration, student administration, study material (production and dispatch), assessment administration, ICT, communication and interactions (call centre, academic and administrative departments, myUnisa), finance, health services and estates.

Institutional success and performance indicators are included in organisational performance management instruments (including student evaluation) which are part of ongoing strategic and operational planning and management.

Drivers, preconditions and predictors include:

- Effective leadership and management at all levels
- Effective and appropriate business and enterprise architectures (academic and non-academic HR capacity, systems, policies & procedures, infrastructure and technology)
- In particular, qualifications, research output & experience of teaching staff
- Conducive organisational culture and climate at all levels
- Inspired, motivated and sufficiently satisfied academic and support staff
- Systematic, ongoing tracking of relevant quantitative and qualitative student activity
- Through this, the identification of risks/opportunities and proactive interventions
- Academic and operational expectations and requirements clearly communicated to students

Proposition 4

In order for fit to arise at each successive stage of the student walk, relevant transformative changes in the identity and attributes of the student and the institution are required.

Transformative change involves various processes, domains and modalities at the individual and institutional levels.

a) Processes: Transformation of identity and attributes occurs as the result of informed co-responsibility. Although what is knowable in a complex socially situated process is not unlimited, the importance of relevant mutual knowledge is central to the model and cannot be overestimated.

- For the student, this implies that s/he comes to know, understand and master all academic and operational requirements and expectations related to higher learning and takes agentic responsibility to execute these in order to be successful. This implies making informed choices appropriate to student's context and life circumstances. These choices are subject to the relative autonomy of a situated agent and to the available locus of control. The process also implies epistemological and ontological learning and development which lies at the heart of the educative process. As the situated co-responsible agent, the student must manage the attendant risks, complexity, uncertainty, unpredictability and seize opportunities through the processes of academic, social and operational integration, adaptation, socialisation and negotiation.
- For the institution, this process implies that the circumstances and lived experience of the situated student are systematically known and understood through qualitative and quantitative tracking of relevant activities, profiling and prediction. Thus informed, all practices in the academic, operational and social domains of the institution are enhanced to maximise the student's successful negotiation of the student walk. This implies institutional transformation, change management, organisational learning, operational integration and continuous adaptation to changing circumstances and student profiles.

b) Domains:

- For the student, transformation of identity and attributes occurs across the inter-personal and intra-personal domains. These relate broadly to psychological and sociological perspectives.
- At the institutional level, identity and attributes play out across the academic and operational domains, both of which are infused and shaped by the social dimension which includes culture, climate, power relations and other social dynamics.

c) Modalities:

- **Attribution:** Transformation of identity and attributes is shaped by the attribution of values, perceptions, assumptions and interpretations. This occurs in relation to both students and institution. The way in which attribution occurs and the extent to which it accords with external "realities" impacts on change, transformation, fit and success.
- **Locus of control:** In relation to both student and institution, change, transformation, fit and success are shaped by some factors and conditions over which they have control and by others over which they have no or little control. In relation to areas of control, agency and responsibility applies. Negotiating risks and seizing opportunities and, ultimately success, relies on clearly identifying and focusing on areas of control. Especially in relation to managing complex process of success and throughput, institution must focus on what is knowable and actionable.
- **Self-efficacy:** At the student level, this is a key psychological construct which is a precondition for success. At the institutional level, this relates to self-belief in the attainability of goals and objectives emanating from staff satisfaction, motivation and common understanding and ascription to institutional objectives.

If the required transformative processes occur as the outcome of informed co-responsibility, fit arises at each stage of the walk. For instance, the successful outcome of the choice/entry stage would be indicated by appropriate course and program choice and load, and identification of appropriate social and academic learner support needs/risks. Likewise, successful fit at the stage of employment/ citizenship would be indicated by employer and employee satisfaction regarding the appropriateness of graduate attributes to the workplace.

Proposition 5

The student walk comprises a series of multiple, mutually constitutive interactions between the situated student and the situated institution and between the student and his/her various networks through all points of the walk

The student walk represents the opportunity for the student and institution to exercise informed co-responsibility through the multiple interactions that each stage presents. These interactions are complex in relation to the changing situatedness, identity and attributes of the student and institution. They can be regarded as mutually constitutive in the sense that the process and the outcomes are a function of both student and institution and of the effectiveness of their exercising co-responsibility in the domains and modalities outlined above.

The complexity of the process of success and throughput can never be underestimated. The student walk is a non-linear, complex process in which events and agents are mutually dependent and mutually situated.

Proposition 6

The formation and transformation of student and institutional identity and attributes is continuously shaped by overarching conditions at the macro, meso and micro levels

As a result of their social situatedness, student and institutional identity and attributes are subject to continuous structural determinants and shifting macro, meso and micro-level conditions and circumstances. These range from broad global, national and local changes to individual, personal biographical shifts. Some of these unpredictable, others are not. At all levels, these changes can influence and shape the circumstances of students in such a way as to enhance or obstruct success.

At the institutional level, these elements are understood and analysed by means of strategic environmental scanning and analysis as well as scenario-building and prediction.

As indicated, operationalising this model rests first on the identification of what is knowable and actionable from the institutional perspective. Creating a theoretically rich understanding of what drives student success, throughput and positive experience does not automatically and necessarily advance our practical addressing of the problem in the institutional context.

5. (IN)CONCLUSIONS

The student success, throughput and retention literature reveals a rich field of exploration. Much has been theorised and written from an interesting array of theoretical perspectives on this fundamental aspect of the higher education enterprise. In the current Unisa context, the internal and external imperatives to effectively enhance success, throughput and the student experience are especially strong. The indulgence of previously siloed approaches can no longer be borne.

The work of the Throughput Forum is therefore particularly significant in its attempt to develop an integrated and comprehensive modelling approach. This Discussion Document represents the first concrete step in this direction. It presents a comprehensive literature review on the topic, drawing from historical and contemporary models in both contact and distance contexts. From this it derives a series of key constructs would form part of a proposed conceptual model of student success and throughput appropriate to the Unisa context. The model is presented in a series of propositions which capture the main assumptions about what contributes to success, throughput and a positive student experience.

The aim is to engage with the University community and other experts in order to refine the proposed model and the framework for managing the process. The intention is not simply to recreate and reproduce existing theoretical and empirical knowledge of this important matter. Instead, the aim is to identify the complexity of the process, in particular the role of non-academic, socio-economic conditions and factors which shape student success, throughput and experience in the distance education context of South Africa. Clearly, this finding will have a profound impact on how the institution adopts its co-responsible role in shaping its learner support initiatives and its academic and operational processes to achieve maximum effectiveness and impact.

Further, the aim is to illuminate the process of identifying what is knowable and actionable about the process from the student and institutional perspectives. From this, existing learner support, and academic and operational initiatives and newly identified ones can be identified, implemented and evaluated over time in order to make an effective contribution to enhancing success.

In so doing, this Discussion Document may raise more questions at this point than provide answers. Although some very useful pointers were found in the literature review, the specific context of Unisa as the only comprehensive distance education provider in South Africa in a developing country demands a unique approach for understanding and addressing student throughput and success. Critical engagement on these matters will undoubtedly help to chart an informed and practical way forward.

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