

THE UNIVERSITY OF CALGARY

**Homogeneity as a Consequence of Attrition
in an Interior Design Program**

by

Delcy A. Walker

A THESIS

**SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF ARTS**

DEPARTMENT OF CURRICULUM AND INSTRUCTION

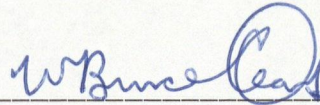
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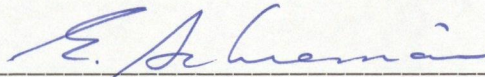
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ABSTRACT

This cross-sectional, quantitative study considered the network of variables affecting attrition within an Interior Design program at a Canadian University.

The respondents included 162 students, 94% of those registered in the four year program. The questionnaire was designed to gather demographic details and information about the student's perception of stress and to allow testing of its effect on their academic and social integration as suggested by Tinto's "Retention Model".

Students appear to be positively integrated academically and socially. Results suggested that social integration was related to stress. Faculty access had the strongest negative correlation with stress. However, results were not as strong as predicted. The homogeneity/ heterogeneity of student responses was also of interest. Excluding first year, homogeneity increased as the students progressed towards graduation. Scheffé post hocs revealed that first year students varied the most from other years in academic integration, social integration, and stress.

ACKNOWLEDGEMENTS

Deepest gratitude is extended to Dr. W.B. Clark for his understanding and assistance with this project. His good humour, statistical expertise and hours spent in reading and advising on this thesis are greatly appreciated.

I also wish to thank Jan MacLeod for her suggestions, statistical input and support throughout this endeavour. It was actually brainstorming with Jan which led to this topic of "Homogeneity as a Consequence of Attrition". I am greatly indebted to her.

In addition I would like to acknowledge the support of my family and friends throughout this endeavour.

This thesis is dedicated to my Mom, who is a graduate of The Edmonton Normal School, and The University of Alberta. She taught in one room school houses in Northern Alberta, before settling in Redwater, where she completed a 35 year career as a distinguished teacher. Her support, inspiration and guidance have been instrumental to any of my achievements.

THE LAST DAY OF SCHOOL

When all my lessons have been learned,
And the last day of school has come
I shall put up my books and games,
Goodbye my fellows, everyone.

The dusty road will not seem long,
Nor twilight lonely, nor forlorn
The everlasting whippoorwill
Shall lead me back where I was born.

And there beside the open door,
In the country dim and cool
Her waiting smile shall hear at last,
"Mother, I've come home from school."

Author unknown

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“What does education do?

It makes a straight cut ditch out of a free meandering brook.”

H.D. Thoreau

CHAPTER 1: INTRODUCTION

Background

The Problem of Attrition

Dropping out, wastage, academic dismissal and voluntary withdrawal are the negative and emotionally laden terms associated with attrition, a phenomenon which has plagued universities and colleges for the last 120 years. While appearing to be a spontaneous decision, the act of leaving a program is frequently a longitudinal process for the student with multi-causal origins (Pantages & Creedon, 1978; Summerskill, 1962; Tinto, 1975). This multicausality often necessitates the synchronic study of the impacting factors.

These complex factors may be conceived as a “weblike network” which impacts the student academically and socially and eventually may lead to dropping out (Terenzini & Pascarella, 1980). Although research has supported consistent cross-discipline factors affecting attrition, interior design programs may pose additional impediments to student retention, complicating the web even further. This study investigated the relationship between *stress* and *integration* as they affect the drop-out process within an interior design milieu at a Canadian university. It was anticipated that the management and perception of stress would act upon academic and social integration to affect retention or attrition.

While the reported rate of attrition from universities and colleges over the last 75 years has remained constant at 50%, there is some controversy regarding the validity of that number. Most studies group all individuals who do not complete a degree in four years as dropouts. Eckland (1964), Spady (1970),

and Timmons (1975) contend that this rate is erroneous due to inconsistencies in the classification of the withdrawing student and the dominance of cross-sectional versus longitudinal studies (which reveal a higher rate of continuance over time—70%). The stopout and transfer students have often been considered as part of the 50% dropout cohort when in fact they eventually complete their original program or another degree.

This phenomenon of the “revolving door” (Cope & Hannah, 1975) is typical of the Interior Design Department under study. Similar to all university programs, the largest percentage of dropouts is reported in first year, with the rate then dropping with each successive year of the program. Although the rate of attrition has ranged from 65% to 85% over a thirty year period (Cox, 1992, personal communication), there is no clear understanding whether these percentages represent four year “track” students only or also take into account stopouts and transfers. Unlike other university degrees this program has many stopouts re-entering throughout the four years of the degree, contaminating the purity of any attrition figures.

Milieu

This study focused on the attrition problem *within* the program under study. This interior design program has gained an international reputation for the quality of designers that it has graduated since 1940 ranking in the top three in North America (Brandt, 1985).

As one of several departments within the Faculty of Architecture, the Interior Design Department benefits from the opportunity for lateral mobility of

instructors, courses and students resulting in a diverse and strong educational milieu.

Opportunities are provided for interdisciplinary stimulation while preserving the integrity of the two fields: majors in either course may have minors in the other and certain courses are common to both. Studios are organized with team projects requiring cooperation between Architects and Interior designers much as occurs in professional practice (Brandt, 1985, p.181).

Since the program offers the only Bachelor of Interior Design degree in Canada, the student body is comprised of an eclectic mix. In-province, out-of-province and international students make up the heterogeneous grouping in first year. Admission is on Grade Point Average (G.P.A.) alone; no interview or portfolio is required. (It is interesting to note that Mount Royal College in Calgary which offers a two year diploma course requires a portfolio as part of the entrance requirement. Prior to this change in admission procedures, the rate of attrition was at 50%; it is now down to approximately 30%, based on a two year track, excluding stopouts who return or students who are collecting arts electives out of the department in order to graduate) (Campbell, personal communication, 1993).

The Interior design program under study is based on full year sequential courses, hence enrollment occurs only in September. As of 1992, students are admitted only after completion of 30 credit hours of arts or science courses in specific areas, with a grade of not less than "C". Students are predominately female and in the 21-25 age range with some degree students entering first year. The goal for most students in this program is an Interior Design degree; however, as this can be considered a precursor to the Master of Architecture

degree, there are students aspiring to this end.

Students are responsible for their own supplies which are used throughout the four years. There are no faculty advisors per se; however, there are “heads” of individual years to whom concerns may be directed. Student/staff ratios are such that individuals become known on a first name basis by the faculty. Most faculty members are practicing interior designers—the link between theory and practice being considered beneficial to the development of a strong teaching body (Gerardi, 1984; St. Clair, 1979).

The historic “atelier” system is a predominant part of the teaching methodology within Interior design programs. This system is based on the architecture studios of the 16th century, where the instructor acts as the “master” or exemplar for the students (Voorsanger, 1987). The studio comprises 40% to 60% of the instructional time and reinforces theory courses by enhancing the students’ ability to transfer theory to design (Cole, 1980). This concept of praxis reinforced by the Bauhaus school is now considered a standard in the education of interior designers (Beckley, 1981). Within the studio the working pedagogy is Socratic in nature, as the instructor directs the flow of questioning with the student responding in narrative or “drawn” communication (Schön, 1983). A student critic dyad emerges: “There are, it would appear, few formats in higher education that offer undergraduates or beginning graduate students as much contact with each other in a context of individualized faculty and staff attention” as that which develops in the design studio (Lyndon, 1978, p.4).

Differentiating Factors Particular To Interior design

While research has shown that dropping out is an involved and complicated issue, interior design places specific stressors upon the individual which are dissimilar to many other academic disciplines, yet comparable to other professional schools such as Architecture, Medicine and Engineering. Class time typically averages 35 hours of classes per week split 40/60 between lectures and studio time. Courses include detailing, design, art history, culture and environment history, design theory, materials, colour, graphic presentation, lighting, professional practice, arts electives and, in fourth year, the senior project. The workload is extensive involving from 35 to 50 hours after class. It is also not unusual for students to work through the night in order to meet the deadlines.

In addition to this workload there is the additional stress of a typically subjective grading system. For example, most schools operate on a "jury" system where the assignments are juried either by peers and faculty or by faculty alone. Students must have the tools, confidence, and basic knowledge to share and receive criticism (Cole,1980; Yelton et al,1968). It is seen as "the instrument by which the work is evaluated for accomplishment in skills and for acceptance of the institution's (and thereby the profession's) assumptions..." (Lifchez,1976). Juries are meant to demonstrate reflective and analytic criticism by professionals and students alike (Barnett, 1966; Dinham,1986; Yelton et al, 1968). Criticism is also a method of socialization within interior design and is used to develop the professional personality (Ain, 1965; Lifchez, 1976).

The number of top marks awarded is limited, establishing a framework of

competition amongst the students. Each students' work is regarded in light of all other work. This method of competition is believed to establish the professional precedent whereby actual projects are won in the marketplace.

In addition to being able to cope with competition and criticism, the student must also have the ability to interpret ambiguous design directives which are an integral starting point for any design process (Heussenstamm, 1971; Schön, 1984). Design is typically more open ended than the scientific paradigm of problem, method and solution which accepts only a narrow spectrum of solutions. It is a process, not an end product, which begins with an ambiguous directive and moves through to a general objective anticipating a wide range of possibilities. The inherent nature of design (of any kind) allows for alternative means to this end.

The ambiguous nature of the directive causes consternation and confusion for many students of design leading to instability within the students' usual state of equilibrium. This point of "disequilibrium" is what Piaget (1977), Prigogine (cited in Yatri, 1988) and Fuller (1962) claim as being critical to the creative act. Prigogine (1980) sees these as "dissipative structures" which involve the transition from disorder to order. Schön (1983) considers this to be a functioning zone of uncertainty or the "zone of proximal development" where the learner is given just enough help and guidance, but not too much, similar to an apprenticeship program. Students are given the tools to work with, then guided by "critics" to their own individual solution which falls within the range of acceptability. The practical application of this concept, however, is at a tacit level. Interior design students are not made aware of the purpose within this

type of instructional methodology, and consequently are often perplexed for much of the assignment's allotted time.

"Constructive attitudes are necessary for a dynamic condition; discontent is prerequisite to problem solving . . . combined they define a primary quality of the creative problem-solver, a constantly developing Constructive Discontent" (Koberg et al, 1981, p.12). Amabile and Hennessy (1989) disagree with this premise, arguing that undue stress can in fact be counter-productive to this process, pointing out that the feeling one has for one's craft may be overpowered by the external environment one finds oneself in. In interior design this requirement to create within a given time frame and at a certain standard establishes a criterion which may undermine the students' confidence. Many of the highest achievers (noted by G.P.A.) are those who cannot cope with these external stressors and consequently leave their program of study (Kesselman,1976).

Pressure on the other hand, "implies an impelling stress or a constraining influence, an exigent demand on one's time or strength by an outside force" (Heffernan,1966, p.21). Rather than being intrinsically motivated, the student strives for "the right answer", attempting to meet the external requirements of urgency and attainment rather than a solution of personal significance. Tasks which are perceived as challenging help students to positively identify themselves as capable and worthy. Pressure, in contrast, produces students who are distanced and uncertain of their role within this framework. The resultant product is thus superseded by the students' worrisome efforts to meet the instructors' expectations. Apathy and discouragement tend to

be the negative by-products of a pressure filled environment (Heffernan, 1966). The selection and sequencing of the assignments in facilitating a stimulating environment is therefore crucial to the retention of students.

In summary, the forces acting upon the interior design student go beyond those of the typical university student. Competition, criticism, ambiguous directives, workloads, and a pressure filled environment are key elements affecting on-time graduation. The students' ability to progress through the four years is dependant upon their coping with these elements. The novice entering first year is unlikely to even know the difference between an interior designer and an interior decorator—the gap being akin to that of an architect and a draftsman. The basic curriculum of the first year establishes the groundwork for the more advanced interior design concepts which appear in the subsequent years. For many, the relationship of interior design to the content of this first year is difficult to determine; others are surprised by the complexity of the field. Both reasons may be determinants in the high rate of attrition from first year. For those who do continue, the transition to a junior interior designer (graduating student) involves stress and conflict; the required quantity of either being difficult to determine. However, the positive resolution of these forces is instrumental in retaining students within the program. A balance among challenge, pressure and tension within the curriculum and instructional methodologies is critical to this transition. The imbalance can often be the final step in a series of issues which comprise the dropout phenomenon.

The Purpose Of The Project

The purpose of this research project was to investigate the relationship between *stress* and *integration* as they affect attrition within the program under study. Research suggests that student and institutional factors affect integration within the dropout process. Integration, or lack thereof, in turn impacts stress which can be divided into eustress (positive) and distress (negative). The resultant effect of eustress is role embracement, of distress—role distancing. From these two polar points the student either assimilates or does not, resulting in a homogenous student body which graduates or a disparate group which does not.

While the student factors tend to be difficult to discern and manipulate, institutional factors such as curriculum content and instructional methodology can be targeted and altered. Through the identification of stress and its affect on the degree of integration, it is hoped that the research will make recommendations for curricular and instructional changes that could lead to a reduction in the attrition rate.

The problem of post secondary attrition has been closely studied in a variety of settings since 1920 with a somewhat consistent number of students “dropping out”. Regardless of the program, 50% of a University’s first year enrollment will not graduate within four years of their starting date (Cope and Hannah, 1975; Dietsche, 1990; Iffert, 1958; Spady, 1970,71; Summerskill, 1962; Tinto, 1975).

Elite institutions have tended to assume that attrition is a consequence of maintaining the competitive academic conditions upon which their reputation depends. For very different reasons, colleges with open door policies have come to accept attrition as an inevitable consequence of their admission policy. In most cases, retention rates have not been a concern unless dramatic attrition occurred in a particular department or program, thus signalling that some type of problem existed. (Lenning et al,1980, p. 1)

The Interior Design Department examined in this study has operated with attrition ranging from 85% in the mid 60's to approximately 65% in the early 90's, based on the "graduating on-time" concept (Cox, personal communication, 1992). This is greater than the average rate across North American universities—yet similar to architecture programs worldwide which range between 50% and 76% (Barnett, 1968; Domer & Johnson,1982; McClure, 1948). It is, however, dissimilar to interior design programs at western Canadian colleges which accept fewer students into program but have far lower attrition rates (Klinkhamer, personal communication, 1992; Campbell, personal communication, 1993; Lyon, personal communication, 1993). This heightened level of attrition not only affects the institution but often negatively affects the individual for many years after. Those who voluntarily withdraw or are academically dismissed from such a small and intimate community often carry a stigma which is difficult to discard. (Baldwin, personal communication, Oct. 21,1992; Kesselman,1976; Lenning et al ,1980).

Definitional Problems

The study of college and university attrition has been plagued by definitional problems; not only of the term “drop-out” per se, but also of the word “attrition” itself. It has come to mean drop-out, non-completion, non-retention and failure. It also includes voluntary withdrawal, not-starting, and stopping-out (Brindley,1987; Johnes,1990). The term is emotionally laden with such precursors as: *marginalization* (structured or unstructured) (O.I.S.E.,1988); *disenfranchisement* (Heinemann et al,1984; Lam,1984) and *failure identity* (Pantages & Creedon,1978). Drop-outs themselves have long been negatively viewed as authoritarian, intolerant, inflexible, avoiders, passive and ambivalent (Gurin et al and Congdon, cited in Spady,1970).

Universities often refer to the general problem of student loss as “wastage”, which is further sub-classified as gross wastage (incompletion of degrees or diplomas) and net wastage (application of earned credits to a new program) (Johnes,1990; Miller,1977). These terms tend to place the responsibility of dropping out solely on the student; however, research suggests that the institutions must also be accountable (Dietsche,1990). “Wastage in higher education is a reflection of the natural imperfections of humans and man-made institutions” (Miller,1977, p. 549). Rogers (cited in Pantages & Creedon,1978) maintains that the “failure of a student . . . should be seen for what it is—a failure for which both the staff and students are responsible” (p.192). Pervin (1968) calls for a transactional approach to the study of students and curricula rather than a separate strategy.

The policies, institutional characteristics and practices of the institution

need to also be addressed in any study of attrition (Miller,1977). The realization that students view a university education as a marketable commodity of which they are the consumer has forced administrations to change their attitudes towards “dropping out” (Kesselman,1976). Perhaps quitting a program is the best thing to do if a particular area of study is not right for the student (Kesselman,1976; Miller,1977).

However, quitting should not necessarily connote failure. Transfers and stop-outs are particular types of voluntary (or successful) withdrawals who have usually been grouped into the drop-out cohort when, in fact, they should be isolated from it (Eckland,1964). Eckland’s 1964 study was one of the first to call for more precise delineations within this group. Prior to this time research referred only to students as either *persisters* or *drop-outs* in general.

“*Persisters*” are those who complete all requirements and receive a final grade in a course (Brindley,1987). These students have been found to be younger (Pascarella et al,1981), better adjusted, more creative, financially secure and have good study habits (Heinemann et al,1984). Trent & Medsker (1968) established that persisters view their program as a means to an end; they are more career oriented than the *non-persister* who sees education as more of a learning process. For some non-persisters their educational goals have been satisfied by their academic experience to date (Pantages & Creedon,1978; Tinto,1975).

There is presently a consensus within research regarding the term “*drop-out*”. It is defined as the permanent loss of a student to an institution and/or one whose graduation is unlikely (Eckland,1964; Pantages & Creedon,1978).

Researchers have not agreed on the definitions within the “*non-persister*” category. Rose & Elton (cited in Pantages & Creedon, 1978) termed the “*successful drop-out*” as having a G.P.A. of 2.0 or better, and the “*unsuccessful drop-out*” as one with a G.P.A. of less than 2.0. Pantages & Creedon (1978) prefer this definition to “*voluntary*” and “*involuntary*” which ignores the factors causing a low G.P.A.; Tinto (1975) prefers “*voluntary withdrawal*”. Eckland (1964) terms this student the “*low achiever*”, Tinto (1975), the “*academic dismissal*”.

“*Stop-outs*” are usually defined as students who drop-out for one semester or more, and then return to the same program at the same institution. It is generally agreed that they have full intentions of eventually completing their program (Kesselman, 1976). The stop-out is considered to have a solid academic competence (Pascarella et al, 1981; Tinto, 1975).

“*Transfer*” is usually reserved for out of university transfer, but may refer to a particular program change.

Operational Definitions

While “dropout” has historically been used to broadly define the non-returning student, the following operational definitions will be used throughout this study to clearly delineate the differences among the withdrawing student population:

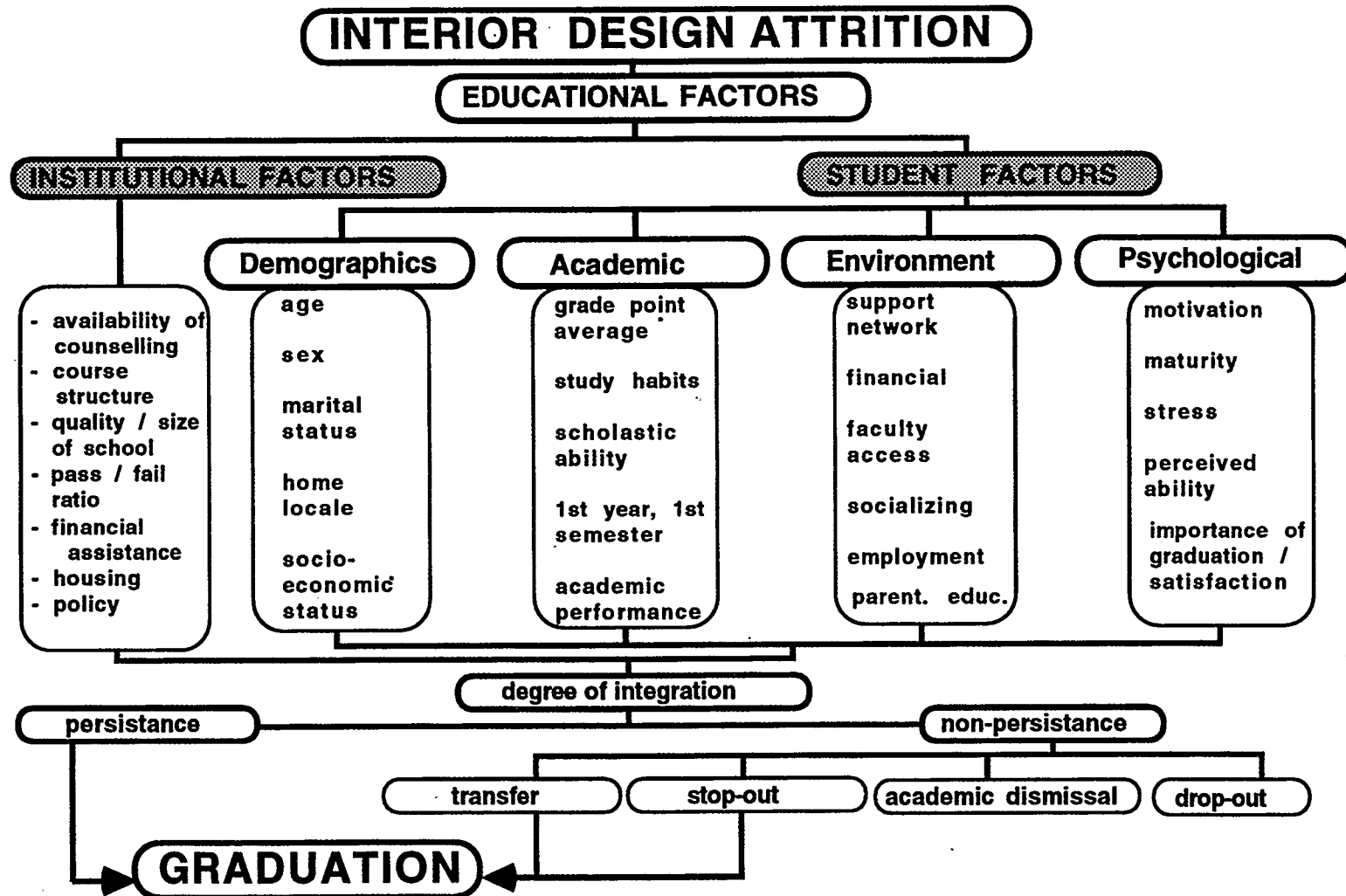
A. <i>Academic Dismissal:</i>	less than a “C” average, university asks the student to leave
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<i>B. Dropout:</i>	leaves university and never returns to complete a degree
<i>C. Non-persister:</i>	drops out voluntarily or involuntarily and may or may not return
<i>D. Persister:</i>	completes degree in four years
<i>E. Stopout:</i>	leaves university and then returns to same or different university; full intention of eventually completing degree
<i>F. Transfer:</i>	transfer from or to another university

These terms are not mutually exclusive. One may be classified as a “voluntary withdrawal”, but in fact may turn out to be a “stopout” or a “transfer”. It is therefore necessary to isolate these out of the encompassing term (non-persister) in any research on attrition. While aiming to isolate factors which are incidental to attrition, this study focused on two influential areas within the “weblike network”: stress and integration (both academic and social).

The model in figure 1 represents the single variables involved in the process of attrition. The mapping of selected variables from this model onto Tinto’s model of integration forms the basis for this study on stress and integration as they affect homogeneity. Assuming that all institutional and student factors may affect integration, the focus will be on the latter portion of the model (figure 5, p. 57) which concentrates on the relationship of integration, stress and the resulting role embracement or role distancing.

FIGURE 1: ATTRITION VARIABLES



Questions And Rationale

One method of reducing attrition is through curricular or instructional changes. By focussing on the institutional factors, yet addressing the student centred factors, it was hoped that a better understanding of this complex interaction would be gained. To this aim the following questions were addressed:

1. What are the major stress factors within the program that negatively affect students?
2. Does the course structure and workload have an impact on attrition?
3. Do background factors such as G.P.A., first semester (first year) marks, financial support, value placed on education, employment, socialization within a support network, motivation and stress affect integration and consequently differentiate between the non-persister and the persister?
4. Do academically integrated students experience stress the same way that non-academically integrated students do?
5. Do socially integrated students experience stress the same way that non-socially integrated students do?
6. Do the fourth year students share a common profile?

Summary

Although attrition has been a contentious issue for the last century, little ground has been gained in the universities' campaign against it or understanding of it. While research has given us insight into the predictors of

success and causes of distress for students at university, the institutions have not actively sought to decrease the rate.

A major difficulty with attrition is the phenomenon's nebulous nature. For example, students when queried as to why they drop out will give socially acceptable answers rather than detailed explanations of the chain of events leading to the finalizing decision. Exit interviews are seldom carried out; a student often leaves mid-term or does not return for the next semester, the university never finding out the cause for the departure. Reasons may centre entirely on the student, or the institution; but usually it is a mixture of these two broad factors which cause a lack of "fit" between the student and the institution resulting in a distancing from the typical role of "student". Student integration with the university environment is critical to maintaining enrollment. Tinto (1975), has called dropping out the

longitudinal process of interactions between the individual and the academic and social systems of college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which lead to persistence and / or varying forms of dropout (p.94).

While it is difficult to counteract the negative factors in a students' background, it is possible to critically assess what the institution can do to facilitate continuance within a program or, alternatively, preselect individuals who are more likely to succeed. Although attrition factors appear to be consistent across disciplines, interior design through its curriculum (tacit and expressed) and instructional methodologies appears to impose additional stressors upon the individual which may critically impact the dropout process.

This study attempted to isolate these factors as they affect integration with the possibility of recommending changes to the curricular and instructional methodologies within this particular interior design program.

CHAPTER 2: LITERATURE REVIEW

Introduction

The scope of material considered in this review regards attrition as it relates to university and college students. It includes a brief history of attrition research, the rate of attrition, and the multi-causal nature of dropping out. A second section on characteristics of attrition differentiates between the two main areas which characterize the phenomenon: institutional factors and student centred factors. This is followed by an examination of theoretical models and further research specific to the area of interior design. The development of theoretical models in the 1970's marked the apex of attrition research. Studies since then have tested these models, but have not produced new theories.

History of Research on Attrition

Attrition at the post-secondary level has been a focus of research since the early 1930's. Research undertaken by U.S. government agencies (McNeeley, 1939 and Iffert, 1958) represents the only large scale projects done prior to that time. Iffert's study of 12,000 students at 149 different universities served as the launch for modern day research which analyzes attrition from psychological or sociological viewpoints. Prior to this, student losses to universities or colleges interested researchers from an administrative or institutional perspective only.

Summerskill's studies were correlational in nature correlating attrition with G.P.A., gender, socio-economic status, age, etc. This marked the beginning of a lengthy period of single variable research methodology. Although these

descriptive studies revealed interesting data on predictors of persistence and drop-out, they did not point the direction to an explanation, understanding or reduction of the problem (Tinto,1975). Further to this, most of these descriptive studies focused on individual schools making the possibility of generalization difficult (Lenning et al,1980).

It was not until the 1970's that attrition research developed along a new theoretical framework. Spady's 1970 study is recognized as the first to conceive attrition as a longitudinal process based on the interaction of the student and the academic and social environment of a university milieu. Spady's approach was to investigate "several clusters of variables simultaneously" (Spady,1970, p.64) within one single design based on his theoretical model of the attrition process (see "Theoretical Models", p. 43).

This shift in analytical methodology from single variable research to multiple regression analysis changed the face of attrition research. (It should be noted that this coincided with the appearance of computer statistical programs.) Tinto (1975) expanded on Spady's model investigating integration from the viewpoints of morals (values) and affiliation (interpersonal relationships). Both Spady's and Tinto's models have their roots in Durkheim's Theory of Suicide: insufficiently integrated people "drop-out" of society. This concept of integration appears to be germane to most of the significant attrition research since 1975.

The primary focus of attrition research since 1975 has been derived from the Tinto model (see figure 4, p.50). Tinto argues that dropping out is an ongoing process of interactions between the student and their environment, which continually shapes the students' goals and commitments (1975). His

model consequently is a predictive theory of attrition. (For a more detailed explanation of Tinto's model see pp. 49 - 52).

Pascarella & Terenzini have supported Tinto's model through extensive research on a variety of topics: academic integration (1978), student-faculty interactions and persistence (1979; Terenzini & Pascarella, 1980), pre-college traits and persistence (1980), and pre-college traits and institutional commitment (Terenzini 1983). Other researchers have also supported this theory of integration and persistence: motivation, integration and persistence (Stage & Richardson, 1985); commitment, expectation, integration and persistence (Winteler, 1986); commitment, background, integration and persistence (Stage, 1987); Jung's personality types and the Tinto model (Kalsbeek, 1989); institutional experiences and integration (Christie & Dinham, 1990); academic integration, commitment and persistence (Dietsche, 1990); first generation students, normative congruence and attrition (Billson & Terry, 1982); utilization of campus facilities and integration (Churchill, 1981).

Bean (1985) is one of the few researchers to diverge from this framework to develop his own model of attrition as it applies to the non-traditional student (see figure 2, p. 45). Acknowledging that integration is central to persistence, Bean has developed a model based upon socialization through role embracement rather than malintegration based on role distancing. Bean's interest has been in non-traditional (older, commuter) students who do not have the privilege of socialization due to circumstance. As such they are not integrated into a structure whereby they can assimilate into the student role, thus elevating the attrition statistics. Bean's studies support the necessity of

socialization as being critical to the retention process, regardless of milieu or student type. His theory has been applied and supported by Broughton (1986) and Farabough-Dorkins (1991).

The Rate of Attrition

The rate of attrition across universities and colleges has been a cause for concern at those same institutions for the last 120 years. Although it is a problem, the attrition rate of 50% has not changed significantly since Iffert's in-depth synthesis in 1958.

Summerskill's (1962) summary of the preceding forty years of research found that half the students enrolled in the United States leave college or university before attaining their first degree. Most of the research which Summerskill reviewed looked at the student who did not "graduate on time" (an average loss of 50% in four years). He states that an additional 20% will "graduate sometime".

The studies of Gekoski & Schwartz (1961), Panos & Astin (1968), Domer & Johnson (1982), and Dietsche (1990) all concur with Iffert's and Summerskill's conclusion of an approximate 50% attrition rate over a four year period. However, Pantages & Creedon's 1978 study which looked at research conducted from 1950 to 1975 concluded that only 1/3 of all who enroll will not complete a degree, thus arriving at the same percentage as Summerskill—30% attrition overall. Likewise, Eckland (1964) contends that the exaggerated 50% rate is also due to inconsistencies in the classification of the withdrawing

student and the acceptable time frame for degree completion. He argues that most studies were cross-sectional, whereas longitudinal studies would reveal a higher rate of persistence over time resulting in a 70% graduation rate. Therefore, the students who eventually graduate should not be included in the “drop-out” term.

Kesselman (1976) maintains that most drop-outs are only “stop-outs” who have full intentions of completing degrees and are among the highest achievers at university: “The stop-out’s grades and attendance record are as good or even slightly better; and his scholarship aptitude test scores and high school marks are not differentiating factors” (p.15). Tinto’s 1975 synthesis of research studies agrees with this concept; stop-outs usually have solid academic competence, yet have a low commitment to a particular school. The Carnegie Commission which published The Newman Reports of 1971 and 1974 found that the same number of ex-stop-outs went on to graduate school as did persisters. These reports were influential in changing historically negative attitudes of university admission committees towards stop-outs (Kesselman,1976).

Eckland (1964) and Pantages & Creedon (1978) conclude that the most meaningful research regarding the rate of attrition is therefore multivariate and longitudinal in nature (more than four years) and one which has very precise operational definitions.

Regardless of the research methodology employed (single variable or multivariate longitudinal), attrition is found to be highest during first year and immediately after (Billson & Terry,1982; Eckland,1964; Iffert,1958; Lam,1984;

MacMillan, 1989; Summerskill, 1962). This critical year is often regarded as the university's screening mechanism (Summerskill, 1962).

Typically stress and anxiety are characteristic of the end of term, regardless of program year. However, decisions to leave university are usually made while the student is on vacation just after the stress has finished. Relief coupled with lack of desire to return are instrumental in the student's decision making process (Barger & Hall and Sharp & Kirk, cited in Pantages & Creedon, 1978).

After first year the rate of attrition drops inversely to the year of program, i.e., the chances of returning are higher if the student stays in program for a longer period of time (Brigham et al, 1982; Tinto, 1975). There is little attrition in the final year (Eckland, 1964; Tinto, 1975). Freedman (1956) termed the problem of final year drop-out as "existential dilemmas", anomalies leaving for circumstantial reasons beyond the usual explanations.

Multi-Causality

Iffert (1958) and Summerskill (1962), after summarizing the work to date, were the first researchers to point to the multi-causality of the attrition problem. This phenomenon calls for the simultaneous examination of variables through multivariate analysis (Pantages & Creedon, 1978). Universities need to look at the primary and secondary causes of attrition. The combination of these may have a cumulative effect and ultimately lead to non-persistence (Summerskill, 1962). While popular belief is otherwise, the predominate reasons for attrition "involve psychological, sociological, or economic demands rather

than strictly academic demands of the college environment” (Summerskill,1962, p.637)

Tinto (1975) and Spady (1970,1971) further promoted this view with the development of their interaction-integration models. Contrary to Durkheim’s theory that insufficiently “integrated” people “drop-out” of society, Tinto (1975) found that integration academically or socially is not a sole predictor of success in post-secondary education. The student’s background, commitment to the institution, educational expectations, degree of conformity and motivation also play key roles in the longitudinal process of dropping out.

It is difficult to accurately pinpoint why students leave college or university; reasons tend to be couched in socially acceptable constructs with “financial” being most often cited as the main reason for dropping out. Attrition is a complex, interdisciplinary problem; however, successful assimilation academically and socially will usually result in persistence (Pascarella & Terenzini, 1978, 1979; Tinto, 1975). This “normative congruence” defines successful students as having attributes compatible with those of the environment they find themselves in. Congruence may enhance achievement, resulting in a positiveness which relates to satisfaction (Heinemann et al, 1984; Pervin,1968). A break in this congruence results in a “suicidal” (in relation to schoolwork) attitude (Spady,1970; Tinto,1975). High congruence between student and college press (environment) increases the probability of persistence (Pace and Stern cited in Pantages & Creedon,1978; Terenzini & Pascarella,1980;Whitson,1989).

In reviewing the literature regarding socializing and its effect on studying,

Spady (1970) concludes that "a strain is created between academic and social systems of the college that leaves the serious student only a small margin of compromise" (p.76). In fact Spady cites many studies where profound relationships and typical extracurricular functions have had a positive effect on retention. "Non-participants" do not have the safety net structure of support which is germane to success in university. This network is integral to persistence regardless of the social acceptance of the network (Spady,1970).

While many variables have been considered as instrumental to the dropping out process, the dominant one to be studied within the last two decades has been the "fit" of the student and the institution (Bean, 1985; Billson & Terry, 1982; Feldman & Newcomb, 1969; Tinto,1975; Pascarella & Terenzini, 1980; Pervin, 1968; Spady, 1970). If the needs and goals of the student match the demands and resources of the Institution, it is probable that the "fit" will be good and the student will be a "persister". However, if there is an imbalance within this formula the student will begin to feel marginalized and eventually will leave the institution (Pantages & Creedon, 1978). Martindale in his studies on communities and the characteristics of their members found that the smaller and more intimate the community, the higher the demand for conformity by its members. Lack of conformity often results in marginalization and/or disenfranchisement (Martindale, 1963, 1962). Conformity is further defined as the acceptance of institutional (cultural) goals and institutional procedures (Martindale,1963).

The students' commitment to the institution is affected by their degree of social integration, whereas academic integration affects the student's goal

commitment (Tinto,1975). In their 1978 review of research on attrition, Pantages and Creedon found that this “college fit” theory was strongly supported.

Characteristics Of Attrition

To unravel the “weblike network” which precipitates dropping out, it is necessary to differentiate between the two main areas which characterize the phenomenon: *institutional factors* and *student factors*. Research which has been done in the last 35 years has focused on variables under one or the other of these two umbrella terms with conflicting reports resulting from the study of individual predictor variables. Prior to Spady’s theoretical model, research focused on predictor variables as single causes of attrition. Due to the multi-causal nature of the problem, several researchers since 1970 have found it necessary to look at several variables simultaneously and contextually (Bean,1985; Pascarella & Terenzini,1978,1980; Spady,1970; Tinto,1975).

Institutional Factors

Institutional factors of concern are: availability of counselling (Fogel & Yaffe,1992; Metzner,1989), course structure (Gekoski & Schwartz,1961; Panos & Astin, 1968), quality and size of school (Summerskill,1962; Tinto,1975), pass/fail ratio (Miller,1977), and policy, characteristics and practices (Dietsche,1990; Pervin,1968; Whitson,1989). Other institutional factors of importance are financial assistance and housing.

Financial Assistance

In the majority of the studies done on attrition, "financial" is listed as one of the top three reasons students leave (Keller & Rollins,1990; Panos & Astin 1968; Pantages & Creedon, 1978; Summerskill,1962; Tinto,1975; Trent & Medsker 1968). Although this is often viewed as a socially acceptable answer, the overall effect of finances appears to be overinflated (Tinto,1975). Financial assistance in the form of grants and scholarships offered by institutions tend to provide incentives to the student to persist (Pantages & Creedon,1978). Keller & Rollins' (1990) study of non-returning freshmen found that they were all unsatisfied with the financial aid available from the university and that this was one of the highest reasons for leaving listed by the students.

Housing

Many researchers have studied the relationship between living arrangements and attrition concluding with overwhelming support that *persisters will have lived on campus* in their freshman year (Eckland, 1964; Johnes,1990; Lam,1984; Spady,1970; Terenzini & Pascarella,1980; Thomas et al,1987). As the prime socializing agent campus residency allows students to steadily weave a network of contacts with students, faculty and the environment which emotionally binds them to that university (Bean & Metzner,1985; Billson & Terry,1982). This high level of social integration is a critical component for retention (Billson & Terry, 1982; Johnes,1990; Spady,1975). It also leads to a significant level of commitment to the institution, not just an academic goal (Dietsche,1990).

Student Factors

Demographics

Demographic factors of concern to attrition are: age (Bean & Metzner, 1985; Johnes, 1990; Summerskill, 1962), gender (Sewell & Shah, 1967, 1968; Spady, 1970), marital status (Johnes, 1990; Panos & Astin 1968), home locale [Lam, 1984; Gurin (cited in Tinto, 1975)], and socio-economic status (Eckland, 1964; Summerskill, 1962).

Academic

Statistically, the variables within this group (G.P.A., study habits, scholastic ability and freshman academic performance) have been found to be the most significant isolated predictors of attrition. While this may be so, they still only account for a small percentage of students who actually do not persist (Pantages & Creedon, 1978; Summerskill, 1962).

Grade point average

High school grade point average (G.P.A.) is among the strongest pre-enrollment predictors of university and college success (Bean & Metzner, 1985; Domer & Johnson, 1982; Fogel & Yaffe, 1992; Johnes, 1990; Summerskill, 1962; Tinto, 1975). The G.P.A. tends to be reflective of the student's past ability and the universities' expected level of future achievement (Tinto, 1975).

While it is the most reliable predictor of academic success, achievement is not in itself an indicator of persistence. The research on stop-outs reinforces this. They are an academically successful cohort; however, they will stop-out

and eventually return to either their original university or one more suited to their academic goals (Kesselman,1976; Pascarella et al,1981).

Study habits

Study habits have proven to be reliable predictors of attrition. If these are poor, then it is likely that scholastic achievement will be poor and the student will withdraw (Pantagos & Creedon,1978). Academically involved students (good attendance, study habits, time spent studying, prioritization capability and homework completion) tend to be persisters (Billson & Terry, 1982; Dietsche,1990; Trent & Medsker,1968). "Good and poor students are differentiated with fair accuracy by patterns of work and study, i.e., time put in study, time spent in class, methods of study, ability to keep up with work, reading speed and comprehension" (Summerskill,1962, p.637).

Conversely, Malleson (1958, as cited in Miller,1977) found that non-persisters spent as much time studying as graduates. It should be noted that there was little differentiation made in the 1950's between the various types of non-persisters. Malleson's results could have been affected by poor operational definitions which would have classified the transfer and stop-out as drop-outs.

Scholastic ability

Summerskill (1962), Sewell & Shah (1967) and Iffert (1958) found that Scholastic Aptitude Tests (S.A.T.) were useful in distinguishing differences between persisters and non-persisters. As one of the three intelligence factors, S.A.T. usually correlates with college success (Eckland,1964). Although it is a

good predictor of achievement, the S.A.T., like the G.P.A., is not a good indicator of persistence (Pantages & Creedon, 1978).

Freshman academic performance

Although there appears to be a positive relationship between the first semester, first year performance and persistence, the findings prove to be a heteroscedastic predictor; poor grades are better predictors of attrition than good grades are of retention (Summerskill, 1962).

Tinto (1975) contends that students do not withdraw because of this low G.P.A., but rather because of insufficient rewards within the system. The G.P.A. appears to be the dominant form of extrinsic reward for university students, which equates to pay in the outside world. As graduation approaches, the rate of attrition drops inversely to the year of the program, the reward of graduation being the ultimate source of achievement within the system (Spady, 1970).

Environment

Support network

An effective support network includes the peer group, family, friends and faculty. While not a significant predictor of collegiate success, socialization through a support network is a dominant force in influencing drop-out decisions (Bean, 1985). A non-participant does not have the "safety-net" structure of support which is integral to a balanced life on campus (Spady, 1970). This lack of "role" for an individual creates social isolates or deviants who are not part of any particular group leading to a lack of social integration and ultimately

dropping out (Tinto,1975).

Pascarella & Terenzini (1979) found that the association with faculty influences persistence. This relationship is often paralleled to absent parents, the consequence being that faculty may become parental role models.

Friends of persisting students tend to live on campus (like them), allowing for stronger social integration and an immediate support network. The support of friends from off campus who do not have direct involvement with the students' daily life ultimately leads the student away from the university (Billson & Terry,1982). "The peer group forms the most significant external influence on the college student" (Pantages & Creedon,1978, p.70). Hence, if a significant other is outside of the school situation, there will be a reduction in "fit" with the institution. Students as peers represent the primary agents of socialization and are therefore critical to retention (Bean,1985).

A cohesive, co-operative and independent friendship network is integral to persistence regardless of whether it is a socially acceptable network or not (Panos & Astin,1978; Tinto,1975). The quality of the students' acceptance within the peer group relationship (elevated or insignificant) is as important as the value set of the group (Pantages & Creedon,1978).

Persisters come from open, supporting, motivating and encouraging families which have high parental expectations and aspirations (Sewell & Shah,1968; Tinto,1975). "Better educated, more urbane and affluent parents enjoy more open, democratic, supportive and less conflicted relationships with their children" (Spady,1970, p.70).

Financial assistance

“Financial” tends to rank in the top three as a reason for dropping out, making it a critical aspect in the study of attrition. Whether or not this is a valid or merely socially acceptable response is difficult to discern (Brigham & Terry, 1982; Eckland, 1964; Spady, 1970). While “financial” may be a contributing factor, as an isolated predictor it does not determine who persists (Panos & Astin, 1968; Trent & Medsker, 1968).

Summerskill, in his 1962 analysis of attrition research found that the parental income of non-persisters tends to be less than that of graduates' parents; however, Eckland (1964) found that this was not an impacting factor. Students who perceive that their parents are suffering financially because of their attending university are also less likely to persist (whether or not this is the case).

In addition to personal financing, Pantages & Creedon (1978) contend that grants and scholarships provide incentives for persistence.

Faculty access

Access to faculty is not a critical component in the drop-out process. It does, however, have a minor impact on the integration of students with their environment when the faculty assumes a parental role model (Gekoski & Schwartz, 1961; Pascarella & Terenzini, 1979; Spady, 1970). Pascarella & Terenzini (1978, 1980) found that persisters had more frequent faculty contact than did non-persisters and that interaction with faculty is the most or second most important variable in the drop-out process. Likewise Whitson (1989) found

that a warm, caring attitude by the faculty is important to retention.

High congruence between the student and university press increases the probability of persistence. Since this environment is represented through the people (faculty), it is critical that these people represent the university positively and are viewed as accessible by the student (Pantages & Creedon, 1978).

Socialization

Viewed by many as the downfall of the university student, extracurricular activities and socializing actually have a positive effect on retention (Gekoski & Schwartz, 1961; Terenzini & Pascarella, 1978). It is an integral component of a student's "safety net structure" (Spady, 1970). Balanced with the formal (academic) environment of the university, the informal (social) environment is seen as a major element in producing the persistent student. Exposure to other students and the opportunity to interact with them through extracurricular activities and housing enhances the student's social integration (Christie & Dinham, 1990). However, excessive socializing does often result in academic dismissal, while no socializing may produce the voluntary withdrawal (Tinto, 1975).

In addition acceptance, adequacy, and recognition within the social milieu are as important to retention as the student's academic standing (Summerskill, 1962). Marginalization within the social structure may begin before arrival on campus and can be just as detrimental as academic failure. It can be exacerbated to the point that students become disenfranchised (Lam, 1984). "The attrition problems that predominate in the colleges involve

the students' failure to meet the psychological, sociological or economic demands rather than the strictly academic demands of the college environment" (Summerskill, 1962, p. 637).

Several theories have developed regarding socialization and its impact on the drop-out process. Tinto's (1975) and Spady's (1970) are based on Durkheim's theory of suicide (insufficiently integrated people "drop-out" of society). Bean's (1985) theory is based on the theories of socialization. (For further discussion see pp. 44- 46).

In effective socialization, we take on the appropriate role (norms, attitudes, etc.) of the group we aspire to belong to. The interaction of others in the same category results in what Bean terms "assimilation". This is defined by Martindale (1963) as "one of the many names for the process of establishing one community, and one goal-value system" (p.313). This process can be instrumental in the drop-out process: "If students aren't selected or socialized to the values of the institution early, they are likely to drop out" (Bean, 1985, p.53). The more tightly woven a community the higher the degree of assimilation required of its members (Martindale, 1962).

Assimilation or socialization is often a natural process for the traditional student. They do not commute, they live on campus, and are full time students—all of which are prime socializing agents. The high rate of drop-outs from commuter schools can, in part, be attributed to the lack of social integration with the university: Students become isolated from the culturally inherent aspects of the campus. (Bean & Metzner, 1985; Pascarella et al, 1981)

Employment

There is a strong correlation between the number of hours spent working and non-persisters. Work (and commuting) interfere with study time (Billson & Terry, 1982; Churchill, 1981; Iffert, 1958).

The determinant in the drop-out process is the value placed by the student (and support network) on education over work (Billson & Terry, 1982). Where work is more highly embraced than education, the opportunity for full time work will be seized upon over continuance in university (Brigham et al, 1982). Early non-persisters are often a direct result of full time employment; the greater the number of hours worked, the higher the risk of not persisting (Pantages & Creedon, 1978).

Parental education

The achieved educational level of both parents is a critical non-intellective factor which positively affects the drop-out process (Eckland, 1964; Stage & Richardson, 1985). Consequently the rate of attrition is higher among first generation university students than second generation students. Students whose parents have attended university are more likely to live on campus and have friends who also attend university leading to *social integration*. First generation students frequently live off campus and maintain friendships with people from their past, (often off campus), causing a lack of social integration.

In addition, the first generation student must often adopt a new and different set of values and attitudes from their parents resulting in a lack of *academic integration*. Parents of second generation students have a high

degree of congruence with student values and are thus more supportive. First generation students do not completely embrace the role of student resulting in less of a commitment to the university. They are less likely to socialize with fellow university students and are in the early stages of the drop-out process (Bean & Metzner, 1985; Billson & Terry, 1982).

If education and achievement are valued at home, then the student will adopt these values and bring them to the college experience (Pantages & Creedon, 1978; Summerskill, 1962). Trent & Medsker (1968) agree that this is an influential element in a student's decision to attend university, but feel that it does not enter into the drop-out process.

Parental expectations and sense of personal accomplishment can also affect the student. Often if parents are not content with their own accomplishments, they will project their aspirations upon their children, motivating them to achieve where they failed, or did not have the opportunity.

. . . a youngster's exposure to higher education is basically incidental to the background of experience he brings with him to the University; it is not college that determines either his worldly success or the lineaments of his adult character, but the same elements in his history and make-up that lead him initially to seek education beyond the secondary level. (Trent & Medsker, 1968, p.ix)

The greater the parental expectations and education, the better the chance that the student will persist (Tinto, 1975). The best levels of achievement and aspirations occur when both parents have high levels of educational achievements. "The higher the level of father's education, mother's education or child's measured intelligence, the greater the proportion of males and of

females who perceived parental encouragement, who planned on college, who attended college, and who graduated from college" (Sewell & Shah,1968).

Psychological

The psychological element which accounts for 10%-15% of all non-persisters considers the emotional stability and adaptation of the student (Summerskill,1962).

Motivation

Since academic, demographic and environmental factors are not isolated indicators of attrition, it could be that the coupling of these with non-intellective factors plays a prominent role in the multi-causal drop-out process. Iffert (1958) and Summerskill (1962) claim that the most prominent reason given by non-persisters is motivationally oriented. "Attrition owing to motivational causes has been widespread and essentially irreducible" (Summerskill,1962, p.643).

Individual motivation becomes closely linked to goal commitment. Marks (cited in Pantages & Creedon,1978) found that those students who expected to drop-out did, and that those same students had difficulty resolving conflicts concerning educational values. Students with low institutional commitment were also most likely to be non-persisters while those with high institutional commitment were persisters.

Students with low intentions of receiving a degree had less chance of obtaining it in four years. This underscores the "college fit" theory: "If the needs

and goals of the student equal the demands and resources of the institution, then there is a congruence which will result in persistence" (Bean,1985; Dietsche,1990; Heinemann et al,1984; Pervin,1968). Pantages & Creedon (1978) supported this theory in their synthesis of attrition studies. They also rank motivational problems in the top three reasons given for withdrawal.

Summerskill (1962) concluded that many students are in university for a variety of reasons: social, marriage opportunity, liberal education, etc. The motives are not necessarily intellectual, which, in itself may lead to attrition. (Once the desired goal is attained, there is no motive to continue.) He also found that students with definite vocational goals were the most likely to persist.

This effect of goals on attrition has been studied by several researchers. Tinto (1975) believes that the student "will continually modify his goal and institutional commitments in ways which lead to persistence and/or varying forms of drop-out" (p.94). Lam (1984) sees goal fulfilment as the most influential motivational factor. Tinto (1975) ranks goal commitment after ability, as most important to the persister, the higher the individual level of expectation, the further the student will advance. Spady (1970) observed that students with clear aspiring goals of graduating will persist to graduation.

Motivation appears to be a key factor in the determination of the persisting student. However it is a dynamic concept and as such is in a constant state of flux. Within this, there appear to be two impacting dimensions affecting attrition: (1) first year students are still significantly affected by their non-university environment (causing a lack of integration) and (2) they act according to emotions, not the cognitive factors which a university rewards.

Thus, throughout the program, the face of the non-persister changes (Summerskill,1962). The stop-out personifies this dynamic. These are students who usually stop-out to test their goals, or redirect their focus. They may not be ready for university yet, or may be heading towards a goal which they have no ownership in. When stop-outs return, they often out-perform the persisters in being personally motivated to their goals (Kesselman,1976).

Maturity

Non-persisters appear to be less mentally mature than persisters (Spady,1970). Since the highest rate of attrition occurs in the first year (when students are youngest), or shortly thereafter, one is led to believe that there may be a relationship between maturity, age and persistence. Slocum (cited in Pantages & Creedon, 1978) proposed that many students are immature and not ready for the university milieu. Iffert (1958) felt that attrition could be reduced if the selection process was more stringent and selective in reviewing young entrants. As a coping mechanism, "age represents maturity and experience in dealing with stressors" (Carmel & Bernstein,1987, p.43)

Stress

Stress in life events results from the positive or negative interaction of the individual with their environment. The assumption is that we are homeostatic beings. Physical, social and psychological demands shift us out of this state causing a degree of behavioral change. It is this degree of change which researchers suggest creates anxiety and stress. "The critical dimension

appears to be quantity of change per unit of time" (Pelletier,1983, p.51). This in turn may severely impact one's psychological being. (Morse & Furst,1979; Miller,1989)

Behaviorally, this is evidenced in withdrawal, defensive behaviour, anger, denial and mistrust. Intellectually, we see it emerging as a lack of concentration, lack of attention to details, pre-occupation, and reduced creativity (Calhoun & Calhoun,1983). What develops is a strong relationship between stress and academic performance (Sheridan & Smith, 1987).

Increased stress tends to characterize poor person-environment congruence (Huebner, cited in Heinemann et al,1984) which, as noted by Tinto (1975), is a major cause of attrition. Significant stressors impacting this congruence are final grades, excessive homework, papers, exams and studying for exams (Kohn & Fraser,1986). Cecini & Friedman (1987) found that students experiencing high anxiety had lower grades than students with low anxiety, especially in first year. They observed that this had been addressed in dental schools which reduced the number of class hours in first year programs. "This seems to reduce the first year 'burnout, blowout, drop-out' phenomenon and has become a successful stress management approach. Perhaps, too, stress during the first year is cumulative" (p.18).

Rose (cited in Pantages & Creedon,1978), maintains that anxiety levels within students are similar for non-persisters and persisters; however, persisters are able to tolerate the anxiety and non-persisters cannot. Fimian (1988) also found a relationship between stress levels and burnout:

Highly stressed individuals were those who experienced low levels of self esteem, an externalized locus of self control, high levels of situational (i.e. state) and long term (i.e. trait) anxiety, poor school life quality and high levels of tedium in the classroom. Students at risk of burnout experience each of these, but also perceive a number of achievement pressures in the house and higher than usual stress levels at school (p.403).

Perceived ability

Intelligence as measured by I.Q. (Intelligence Quotient) tends to be a powerful indicator of persistence. Students who are considered to have high I.Q.'s will receive more parental support than those students who are perceived as having average levels of intelligence (Sewell & Shah, 1967, 1968; Trent & Medsker, 1968). Grade point average (G.P.A.) tends to be reflective of the students' ability and the university's expected levels of achievement: The higher the G.P.A. and the individual's level of expectation, the further the student will advance (Tinto, 1975). "The importance of intelligence for progress in higher education is manifestly a reflection of the growth and development of an educational system based on merit, rather than on ascription" (Sewell & Shah, 1968, p.20).

Negative perception of one's ability will also impact persistence. Students who are unsuccessful at the beginning of term develop a "failure identity" which becomes their reality (Glaser, cited in Pantages & Creedon, 1978).

Importance of graduating and satisfaction (workload, instruction)

The importance of graduating and program satisfaction in terms of

instruction and workload are influential factors in the drop-out process. Attrition may be proportionately attributable to the school itself and the created environment within that milieu (Summerskill,1962). Gekoski & Schwartz (1961) suggest that periodic program reviews would determine if the program itself is a contributing factor to the attrition problem.

Priority of assignments regardless of workload is critical to persisting (Pantages & Creedon,1978). Heinemann et al's 1984 study found that 18% of the non-persisters questioned felt that they were too far behind in their work to continue. They also thought that university would be easier, the work they did was not rewarded, grades were more important than learning and their creative potential was not being developed. Gekoski & Schwartz (1961) found that 16 % of the non-persisters questioned were dissatisfied with courses and faculty. The general comment from this group was that coursework was not preparing them well for their chosen careers. Program reviews, in which the courses were re-assessed could provide for "learning experiences that lead to a sense of accomplishment rather than frustration..." (Bean,1985, p.61).

Theoretical Models

Attrition is a multi-causal, interdisciplinary phenomenon. No single variable within the institutional or student-centred groups can accurately predict who will persist nor who will leave. Beyond the complexity of the combinations within the dilemma several researchers have studied the concept of attrition as a process best understood through longitudinal path analysis. Rather than focusing on individual variables they have studied the problem from a holistic,

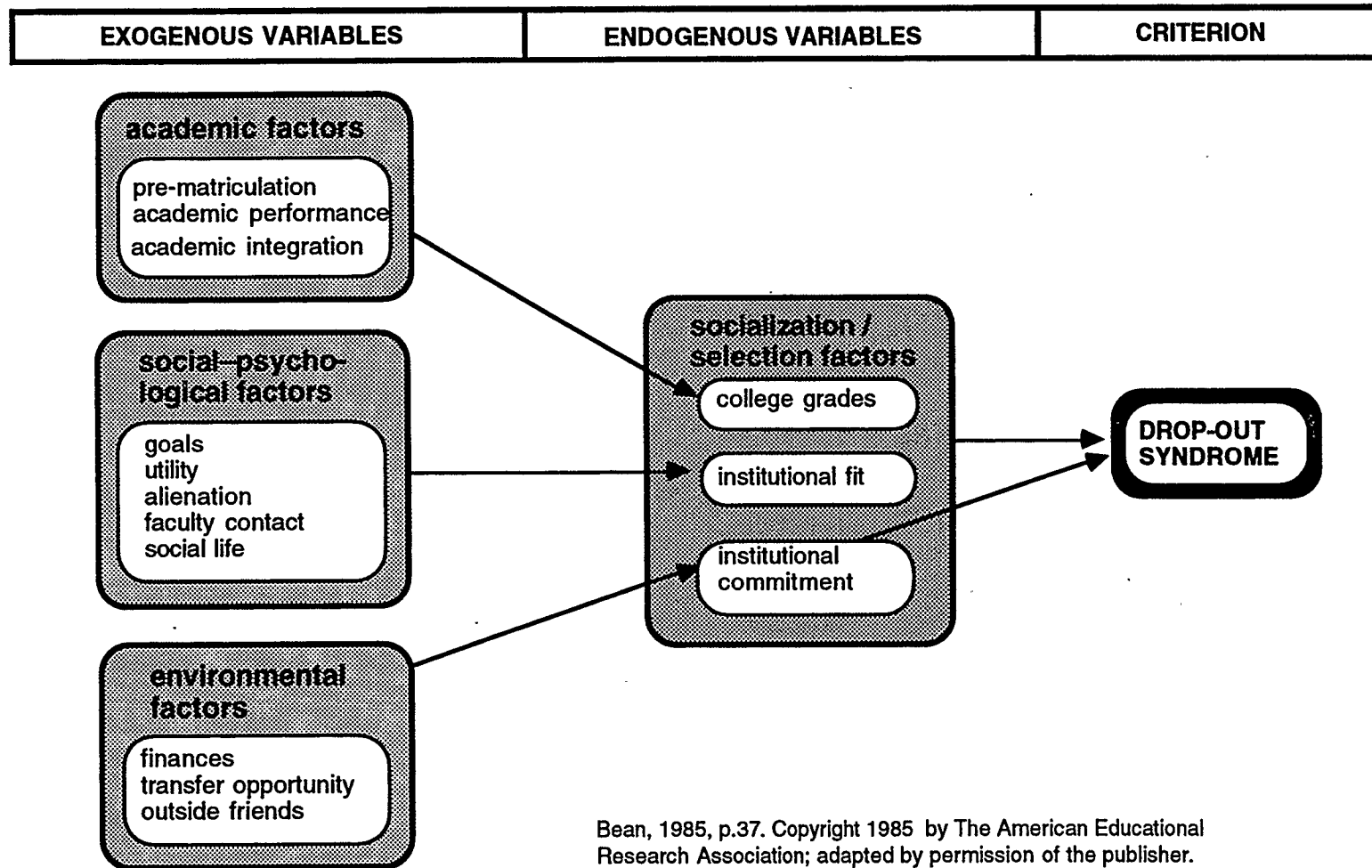
systemic viewpoint. Bean (1985) investigated attrition through the theories of socialization, whereas Spady (1970,1971) and Tinto (1975) focused on integration, through Durkheim's theory of suicide (Durkheim,1951). While both theories consider integration as central to persistence, Bean approaches the subject from a more positive perspective than the other researchers.

The conceptual model developed by Bean (1985) emphasizes social, academic, and personal outcomes (figure 2, p. 45). While pre-matriculation grades are important predictors of persistence, Bean found that institutional fit and commitment play a dominant role in the student's decision to continue. Within this Bean sees "role" as a critical element in the student's socialization process; individuals take on the appropriate student role in their socialization (norms, attitudes, etc.).

Goffman (cited in Billson & Terry,1982) draws the distinction between role embracement and role distancing. Students who completely accept or embrace the role maximize it for their own personal potential investing themselves completely within the role. Students with less commitment to their new role will not participate in the functions of that role (studying, socializing, involvement). Where role embracement is critical to retention, role distancing will result in attrition.

Role embracement through early interaction with others in the same category results in assimilation; roles are similar creating a sense of "fitting in" which becomes significant to retention. "If students aren't selected or socialized to the values of the institution early, they are likely to drop-out" (Bean,1985, p. 53). A reduction in fit (lack of finances, opportunity to transfer, a significant other

FIGURE 2: BEAN'S CONCEPTUAL MODEL



Bean, 1985, p.37. Copyright 1985 by The American Educational Research Association; adapted by permission of the publisher.

outside of school, or interaction with non-university friends and family) will move the student further from assimilation and closer to dropping out (Christie & Dinham, 1990). Bean's conceptual model studied the influential factors within the "drop-out syndrome". The external variables impacting a student are expected to influence the internal factors, which in turn effect the drop-out decision.

College grades indicate a positive external assessment of a student's past behaviour; institutional fit indicates a student's subjective impression of the extent to which he or she currently matches the norms and values of his or her peers and mentors; and institutional commitment indicates the student's personal attachment to the institution extending into the future. (Bean, 1985, p.37)

While academic factors positively influence grades, and social-psychological factors positively impact institutional fit and commitment, environmental factors negatively affect institutional fit and commitment and thereby directly influence the drop-out decision. This concept is based on role theory which stresses the acquisition of appropriate roles through interaction for ultimate group acceptance (Bean, 1985).

Durkheim (1951) viewed occupational role as an essential element within the process of integration. For students, the role which is assumed in university is not only that of student but also that of future occupation. The lack of social integration with peers and faculty in the form of consistent, intimate interaction (friendship support) and the maintenance of a value system which is disparate from the norm (normative congruence) are two characteristics which Durkheim contends parallel suicide. Although the ultimate result is dissimilar,

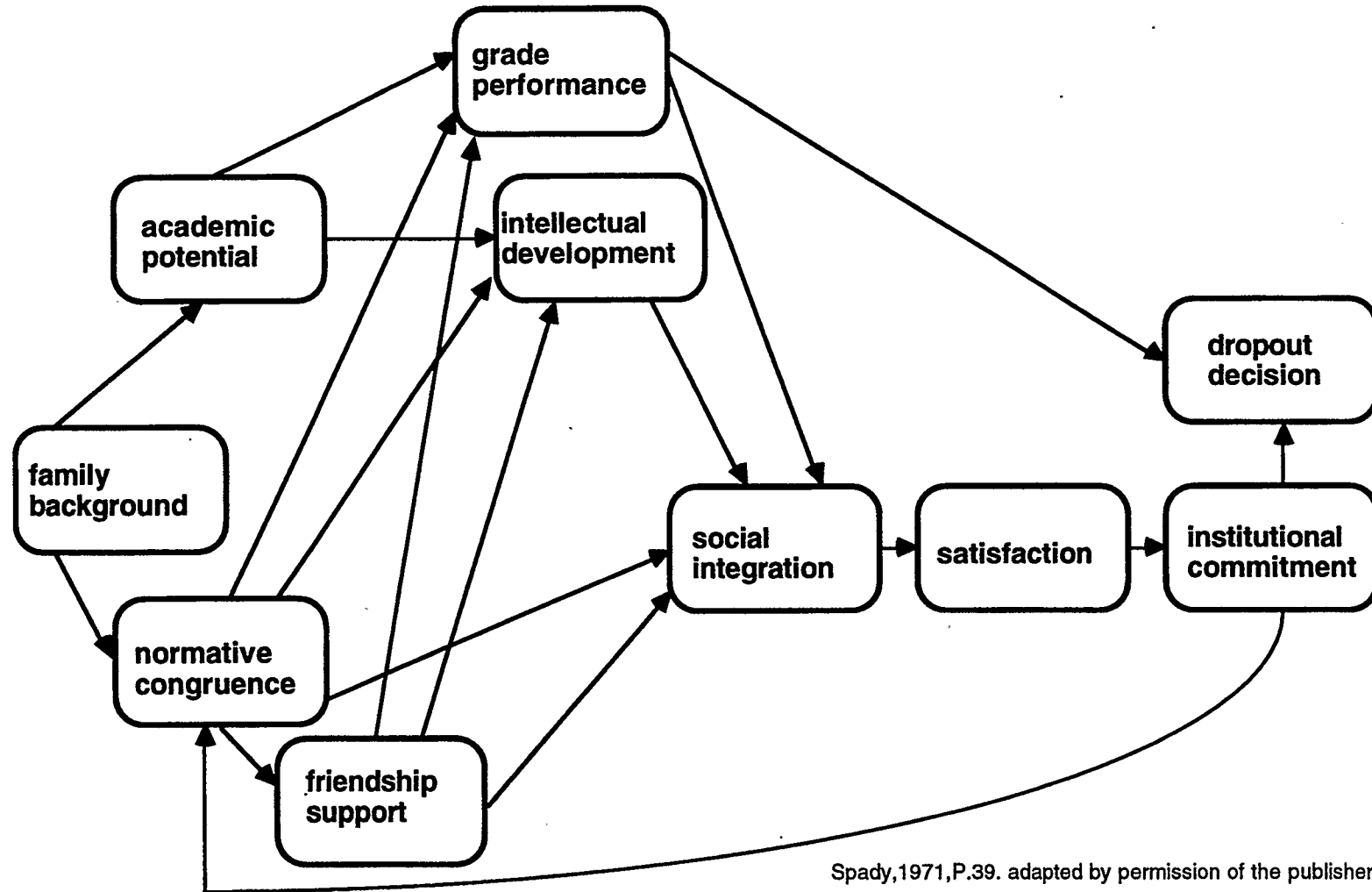
the process to the decision point is analogous. These two conditions establish what Durkheim terms “social integration” (Spady, 1970).

While Spady (1971) contends that social integration is critical to retention, he views the student’s social role as overlapping with the academic role. Combined with the student’s ability and scholastic history, the successful integration of the student depends upon fulfilling the obligations of both the academic and social systems.

Academic success in virtually any university context would favour those with the highest ability and strongest preparation. . . Those determined enough to excel, even by Chicago standards, were fortunate if both their intellectual aptitude and their ability to forego social and extracurricular involvements were exceptional. If they were not, the quantitative and qualitative demands of the standard courseload were generally such that high-level performance was at best unlikely. The paradox of this situation, however, is that academic rewards gained by renouncing extensive personal contacts do not serve to facilitate the students sense of integration in the college. . . (Spady, 1971, p. 59).

Spady does not condone a life of academic solitude. He does, however, stress the fact that there appears to be little margin of compromise for the serious student. Socially active students have the “safety net” structure which often eludes the pure academic. Spady (1970) considers this to be an integral component of complete integration into the student role ensuring graduation. His model (figure 3, p. 48) considers academic potential and grade performance; however, it does not address the issue of integration from this viewpoint. Although Spady views grade performance as directly linked to a drop-out decision, the emphasis of this theory is on *social integration*.

FIGURE 3: SPADY'S THEORETICAL MODEL

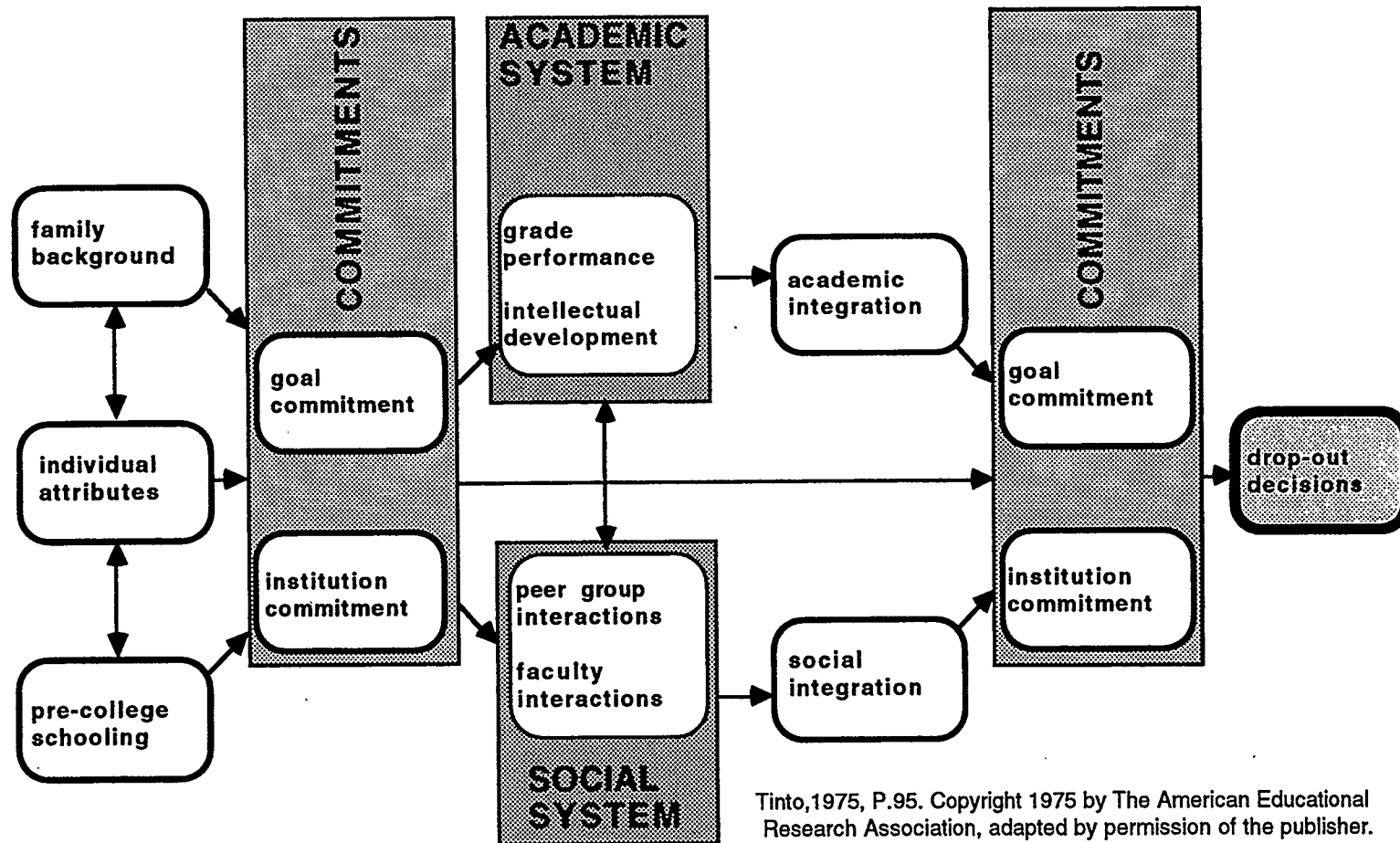


Spady's model contains several independent variables which ultimately affect social integration. Although a critical factor in the process, social integration has an indirect effect on dropping out. It is the subsequent interaction with satisfaction and institutional commitment which affect attrition.

Satisfaction is essentially an outcome of the student's experience and integration with the university. It is assumed that if students are positively integrated they will likely be satisfied with the system. Institutional commitment, in turn, is dependent upon one's satisfaction with the system. If students have had a sense of integration and have received academic reward, then they will likely be committed to the institution (Spady, 1970, 1971). It is ultimately the lack of satisfaction and low institutional commitment which are the real reasons for the drop-out decision (Billson & Terry, 1982). Much of the research done since Spady's seminal work has positively supported this theory (Billson & Terry, 1982; Churchill, 1981; Pascarella & Terenzini, 1979; Whitson, 1989; Winteler, 1986; Stage, 1987). Tinto's 1975 model of attrition builds from Spady's descriptive explanation of the drop-out process, further developing Durkheim's theory of suicide.

Rather than outlining the steps within this process, Tinto developed a predictive theory of attrition which is considered to be the most comprehensive and well known. The model (figure 4, p. 50) is somewhat similar to Spady's; however, Tinto sees dropping out as an ongoing process of interactions between students and their environment which continually shapes the students' goals and commitments (1975).

FIGURE 4: TINTO'S CONCEPTUAL SCHEMA



Akin to “feedback loops”, the model views commitment as a dynamic rather than static element. More emphasis is placed on the pre-university student, not only on their family backgrounds but also on their educational expectations and their motivation. The intensity of those expectations bears upon the level of the student’s commitment to the institution. The most dedicated students are usually the persisters.

Tinto groups academic potential and grade performance into “academic systems” which imminently impact the academic integration of the student. Tinto expands Spady’s “friendship support” to include peer group and faculty interaction. These parallel systems are considered to be important and instrumental in the student’s university experience. Successful integration (academically and socially) strongly affects persistence with high integration usually resulting in high persistence. Researching further, Terenzini & Pascarella (1980), found that high academic integration compensates for low social integration and vice versa.

Tinto concluded that academic integration affects goal commitment, while social integration affects institutional commitment. By nature of the university, academic integration is rewarded and accepted; social integration is not rewarded and is often not promoted. It is his premise that this is at the core of the attrition problem. Students do not quit because of low G.P.A., but rather because the system has failed them through a lack of sufficient rewards inherent in it (Tinto,1975).

Tinto distinguishes between the voluntary withdrawal and the academic dismissal, claiming that the voluntary withdrawal relates to a “lack of

congruency between the individual and both the intellectual climate of the institution and the social system composed of his peers" (p.117). They are consequently isolated out of the intellectual norms of the institution. Academic dismissals often are remiss intellectually and socially or have socialized to an unacceptable extreme. From initial enrollment, this cluster tends to be the least capable when compared to persisters or voluntary withdrawals who have higher G.P.A.'s and are more intellectually developed than either group (Tinto,1975).

: Confirming Tinto's findings, Dietsche(1990) found "academic integration and educational commitment to be of greater importance to persistence than social integration and institutional commitment" (p. 65). Lyons (1991) also supports Tinto's argument that background characteristics are less critical to long term retention than the student's level of integration with the institution. Kelly (1992) however found that integration was time dependent and that as a predictor wanes with time.

Relevant Research

While many professional schools have been studied in terms of attrition, there has been no in-depth research done on the factors affecting dropping out from an Interior design program. This may in fact be due to the relative "newness" of the discipline or the lack of professional status which it has yet to achieve. Often viewed as interior architecture, the program studied in this thesis is in the Faculty of Architecture and closely resembles the architecture program in content—albeit from an interiors perspective. Limited research has been

done on attrition as it affects architecture students; however, this is the most related of any discipline and consequently deserves mention.

Westergaard's (1977) Princeton study found a 50% attrition rate for architecture students, which was similar to the Bannister study of 1954 and slightly less than McClure's findings of 66% (McClure, 1948). Domer & Johnson's 1982 Kansas study on attrition as it relates to architecture has led to the consideration of a variety of selection processes for admission: architectural school aptitude tests, high school rank, G.P.A., portfolios and the Strong Vocational Interest Blank. Out of this group of predictors of persistence, G.P.A. ranked as the best discriminator (Domer & Johnson, 1982).

Unfortunately, Domer & Johnson did not benefit from the theoretical work done by previous researchers. Rather than pursuing the problem from an integration viewpoint, they resorted to single variable analysis, which for a profession such as architecture or interior design is not relevant. "Professional education in and of itself involves a great deal of socialization and a subsequent reorientation in the interest and attention of those who go through it" (Lyndon, 1978, p.3). They do however concede that measures other than cognitive ones would "enhance the effectiveness of the discriminant technique to predict attrition and graduation" (Domer & Johnson, 1982, p. 29).

Summary

Research has provided insight into the predictors of attrition, the type of student who will perform best at a post-secondary institution and the students who are the most likely to drop-out. However, attrition rates for the last sixty

years have remained close to 50% regardless of the findings. Our understanding of the problem has changed from viewing dropping out as a sign of academic failure to regarding the phenomenon as a process of integration or lack thereof within a given milieu. Research has progressed from single to multiple variable analysis, providing a broader and more profound comprehension of the issues affecting attrition.

The variables impacting attrition can be divided into institutional and student-centred factors. Although institutional factors are more easily controlled for, student-centred factors dominate the reasons for students dropping out. The *academic* subset appears to have the most bearing on whether or not a student drops out; however, *demographics, environment* and *psychological* elements are areas which, when coupled with *academic*, will press the students to their final decision. It is this multi-causal nature of the phenomenon which makes analysis and prediction through single variable research difficult.

Evidenced in the preceding pages, the isolated predictors having the most effect on a student's decision to leave are: G.P.A. and I.Q., academic involvement, first semester (first year) marks, financial assistance, value placed on education and employment, socialization within a support network, motivation, and stress. All of these are from the "student-centred" set of variables, and consequently are difficult for an institution to impact through curricular changes.

As one of the top three reasons cited for dropping out, finances are a critical component of the "complex web". They are not, however isolated predictors of non-persisters (Pantages & Creedon, 1978). Institutions which

develop a strong financial program and disperse it in smaller amounts to more students are effective in decreasing student drop-outs due to depletion of financial sources (Pantages & Creedon, 1978).

There are certain background elements a student carries to campus which cannot be controlled for in the university process: parent's education, value placed on education and the students' support network. It has been strongly supported that the higher the level of both parent's education, the more likely a student is to be a persister, the value placed on education having been established long before the student ever reaches university (Summerskill, 1962; Johnes, 1990). The "safety net" structure formed by a support network is integral to a balanced campus life (Tinto, 1975). Although it is not a significant "predictor" of success, socialization within a support network dominates drop-out decisions and, as evidenced in Tinto's and Spady's models, is at the root of the attrition problem.

Linked to value placed on education is value placed on employment, the two being polarizing concepts. Employment is a major determinant in the drop-out process—the greater the number of hours worked, the higher the risk of not persisting (Pantages & Creedon, 1978). Often, if students are given the opportunity for full time employment, they will take it in lieu of completing their studies.

The most prominent reason given by non-persisters for leaving an institution is linked to motivation (Iffert, 1958; Kesselman, 1976). This in turns ties into goal commitment and fit. Often when students are not intellectually motivated to be at university, they will leave as soon as their individual goals

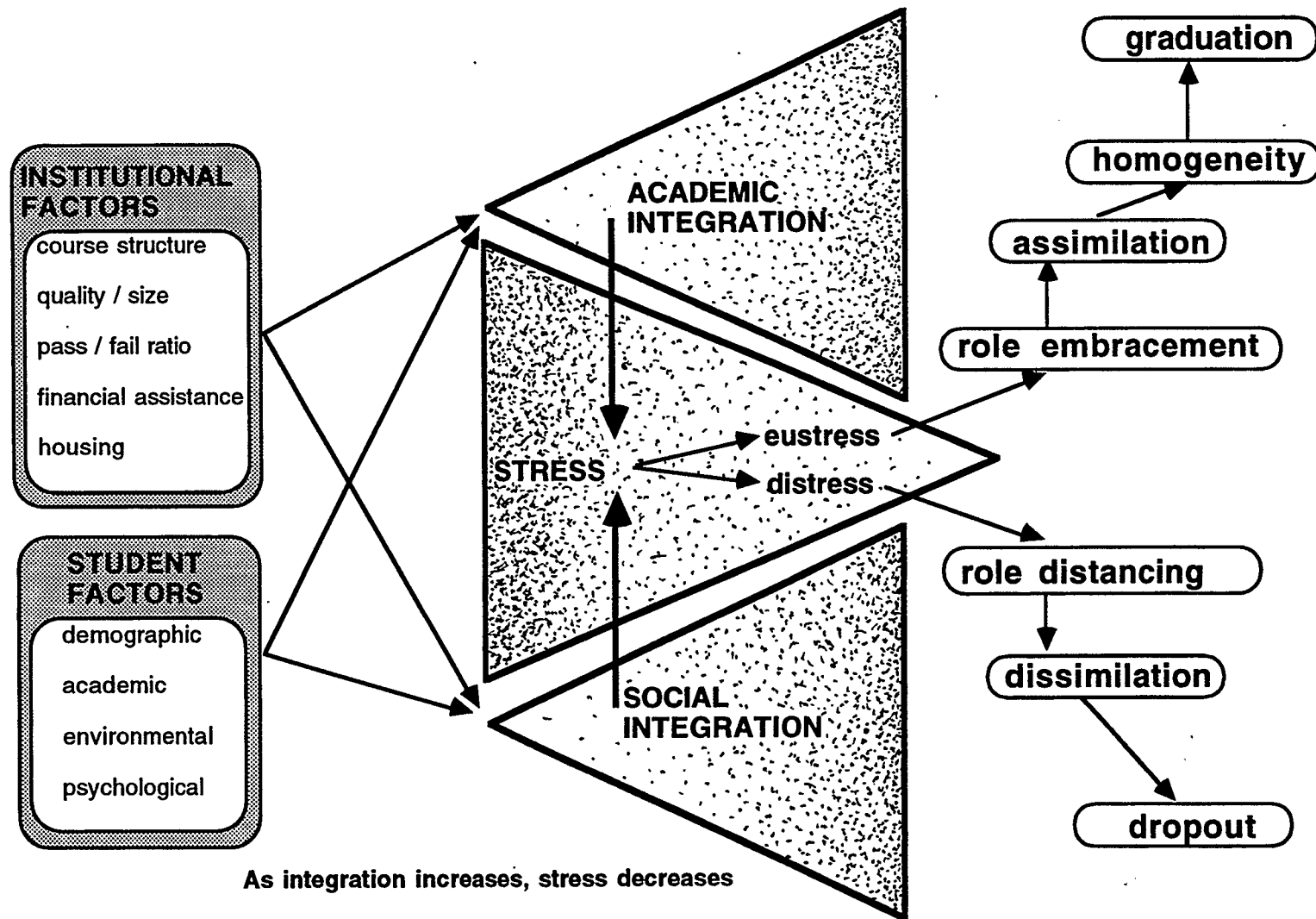
are met. However, if the goal is closely linked to the university degree, then there is a greater possibility that the student will continue in their pursuit. Also, if there is a congruence between the students' needs and goals and the demands and resources of the institution, the student will be motivated to persist (Dietsche, 1990).

Poor person-environment congruence is characteristic of increased levels of stress (Huebner, cited in Heinemann, et al, 1984). The typical pressures of a student's life are associated with grades, papers, exams and projects. Within a course, stress tends to be induced by the workload and instructional methodologies associated with the successful completion of the tasks.

No single variable in the above group can accurately predict non-persisters. Attrition is a multi-causal phenomenon, best understood as a process. The most robust research done on attrition has centred on this perception. Tinto, Spady, and Bean have developed systemic theories based on the "process concept". Bean concentrates on the effects of socialization on the dropout process while Tinto and Spady focus on integration as it impacts attrition. Successful integration (academically and socially) strongly affects persistence; high integration usually results in high persistence. This theory has been strongly supported by Pascarella & Terenzini, Dietsche, Whitson and Billson & Terry.

Socialization and reorientation, two covert and at times overt methods of integration, coupled with the innate stress of a program such as Architecture or Interior design, are quite possibly the reasons for high attrition rates. The lack of

FIGURE 5: INTEGRATION-STRESS-ASSIMILATION MODEL



integration into a very structured system, due to stress, results in role distancing and ultimately in dropping out (see figure 5, p. 57). Role assimilation leading to class homogenization may be a desired inverse consequence of attrition. Inappropriate students are screened out through a para-curriculum striving for conformity.

CHAPTER 3: RESEARCH METHODOLOGY

Methodology

The methodology selected was a cross-sectional survey. Although longitudinal studies are preferred for researching attrition problems, due to time restrictions the weaker cross-sectional method was more feasible for the present study. The cross-sectional design represents a specific point in time, contrasted with the longitudinal study which allows for the analysis of data over time (Babbie,1990). Because of this specificity, generalizing to a larger population is not advisable. It is, however, a useful method “for the determination of relationships between variables at the time of the study” (Babbie,1990, p.56). Although the cross-sectional design is only representative of the target population at that point in time, relationships may persist beyond the framework of the study. An understanding of such persistent relationships may assist the institution in their approach to addressing retention issues.

Description of Institution, Program and

Students Selected

The rationale behind the selection of the university studied was multi-faceted: it has the only four year program in Canada leading to a Bachelor of Interior Design; it is ranked among the top three schools in North America; and it has over its history had a high attrition rate (65%—85%). While this is similar to Architecture programs worldwide (50%—76%), it is dissimilar to interior design programs at Western Canadian colleges. The colleges accept fewer students into their two year programs: choosing to screen the applicants prior to

admission rather than during the program, thus lowering their attrition rates from 50% to between 15 % and 30%.

Further to this, the Administration of the Faculty had shown an informal interest in having the problem of high attrition rates studied. As in all institutions the impact of students dropping out adversely affects the economics and reputation of the school.

In 1948 the original three year diploma in Interior Decoration (established in 1938) was changed to a four year degree in Interior Design. In 1990, the university Senate approved a new program of study which commenced in 1992. This incorporated an arts or science year as a precursor to entering into the Faculty. As of the 1992—93 university calendar year, all students entering the Faculty of Architecture must now have 30 credit hours in arts or sciences before being grouped into a common first year within the Faculty. After the initial year of basic design principles the students enter either Environmental Design or Interior Design.

The program for interior design is four years in total excluding the arts or sciences year. Courses include art history, design, detailing, lighting, theory of design, graphic communications, colour, materials, history of culture and the environment , and professional practice. The following description provided to the students explains the role of an interior designer, establishing the criteria for the curriculum:

The professional interior designer is one who is qualified by education and experience to identify, research, and creatively solve problems relative to the function and quality of man's proximate environment.

The competency of the interior designer includes fundamental design, design analysis, space planning and programming, the design of all interior space and the understanding of other and related aspects of environmental design.

The technical development of the interior designer includes knowledge of structure with emphasis on interior construction, knowledge of building systems and all related codes, equipment and components, and ability in communication skills and in quantitative and administrative skills.

(Source withheld to protect the anonymity of the institution)

An assumption which underlies cross-sectional studies is that the respondents are similar in all essential respects except for the variables being studied. This assumption was violated in the present study with respect to the first year cohort. Due to the program change initiated in 1992, the first year class differs from the second, third and fourth year classes in their academic history. First year students must now have 30 credit hours in arts or sciences prior to being admitted into the faculty. The selection process essentially changed from within course to "pre-course". With usual university drop-out rates at 50% in first year, it is possible that the internal drop-out rates for the four year program will be lowered. (The expected 50% of first year dropouts will have left the university prior to program admittance.) In terms of attrition rates associated with particular program years, this makes the first year class more similar to the second year class.

The target population for the study consisted of the entire student body (in years one through four) of the selected interior design department. The

respondents were a heterogeneous mix: men and women from throughout Canada, with a small number from other countries. However, most students were from the city in which the university is located.

The respondents included 162 students, 94% of all of those registered in the four year program at the time of the survey. There was no evidence that the non-respondents were missing for systematic reasons. As this research studied the causes of attrition over the four year period, it was desirable and possible to survey the entire cohort.

Description of the Survey Instrument

The contents of the questionnaire were largely derived from the literature review (see Appendix B). In particular, Pascarella and Terenzini's 1980 study on predicting freshman persistence was valuable in establishing questions on integration, faculty access and motivation. The literature review prompted further research into demographics, academic achievement, support networks, goal and institutional commitment, the impact of stress and the relationship between employment and education (Bean,1985; Dietsche,1990; Iffert,1958; Pantages & Creedon,1978; Pascarella & Terenzini,1979; Spady,1970,71; Summerskill,1962; Tinto,1975).

The questionnaire was designed to ascertain demographic details and information about the students' perception of stress and its effect on their academic and social integration as suggested by the Tinto model (see Appendix B). A combination of appropriate response, yes/no and Likert type questions were incorporated into the survey instrument.

Likert scaling was chosen for a variety of reasons: it is an efficient means of providing a comprehensive assessment of the responses on any given variable; it provides for uniform scoring through addition and direct ordinality of the response categories (1 to 4); it enables the respondents greater explanatory power through the variation provided (Babbie,1990). The responses available ranged from positive (strongly agree, agree) to negative (strongly disagree, disagree). In order to elicit a positive or negative decision, four choices were provided rather than a typical Likert scale of five which includes the opportunity for neutrality.

Unravelling the “weblike network” which leads to attrition necessitated a lengthy survey instrument which was broken into various sections to aid in its completion. The first 10 sections were based on the student-centred factors leading to attrition (see figure 1, p.15). While some sections conveniently cover the broad terms (demographic, academic, environment and psychological) it was necessary to expand on several topics within these groups in order to focus on areas which the literature pointed to as being significant predictors of attrition. Therefore, financial profile, academic integration, faculty access, social integration, institutional and goal commitment and stress were addressed in separate sections. The final section concentrated on institutionally based factors which were not anticipated to be strong predictors of attrition. The following list outlines the focus of each section.

Survey Instrument Categorization

<i>Section 1.</i>	Demographics
<i>Section 2.</i>	Academic
<i>Section 3.</i>	Environment
<i>Section 4.</i>	Financial
<i>Section 5.</i>	Psychological
<i>Section 6.</i>	Academic Integration
<i>Section 7.</i>	Faculty Access
<i>Section 8.</i>	Social Integration
<i>Section 9.</i>	Institution and Goal Commitment
<i>Section 10.</i>	Stress
<i>Section 11.</i>	Institutional Factors

Analyzing the interrelated items within the survey resulted in another “weblike network” of possible correlations. Correlations were anticipated between these sets of questions (e.g., workload and pressure; assessment and mark satisfaction; workload and balance of schoolwork and leisure; adequate rest and time allocated for assignments). Internal verification also included inverse questions which explored the same subject area.

To assist in the analysis of the data, indexing within certain sections established a composite score for particular predictors. Initially, ordinal numbers were assigned to each response. These were then summed to provide one figure which would be indicative of each subject’s reaction to the entire section. These composite scores (indices) were essential for measuring correlations

between certain factors and individual years. It was anticipated that the strongest relationships would be amongst stress, social integration and academic integration.

Pre-Administration

In January of 1993, The Education Joint Research Ethics Committee at The University of Calgary was supplied with an information package for approval. This included a sample of the survey instrument, the Certification of Institutional Ethics Review, an Application for Ethical Approval of Research, a summary sheet outlining the ethical considerations, a sample consent form, and a brief synopsis of the purpose of the project, literature reviewed, sample selection process, methodology and data analysis description. Approval to proceed with the study was granted prior to the researcher forwarding the proposal to the university in the study (see Appendix C).

Initial contact with the chosen university was made by telephone with the Department Head in late September of 1992, followed by a personal interview with the Dean of the Faculty in November. An information package similar to the package mentioned above was couriered to the Dean on February 4 for the University's Ethics Board approval (see Appendix C).

Follow-up phone conversations took place in February and March to respond to questions arising from this Ethics Committee. A lengthy approval period at the chosen university contributed to the questionnaire being administered very close to the end of term.

Although the committee approved the study, there was a codicil attached

of satisfying the concerns of the Department and proceeding only with their co-operation. One member of the Interior Design faculty sat on the ethics committee and raised several points regarding the study, which were responded to in an interview. The following outlines the concerns and the responses provided:

1. *The data analysis methodology was not clear.*

The proposed analysis methodology of correlations, contingency tables, anovas and regressions comparing program years, indices and research history was explained.

2. *The assumptions of the study were not legitimate (that being that the attrition problem was a function of the program and not the students).*

Since the inception of this program there have been consistent high levels of attrition within this department. One cannot assume that students over the last fifty years did not have the propensity to persist at this program.

3. *Why would a university want to retain students who were a poor fit?*

Whether the institution retains the students or not is an internal issue. This study was only interested in knowing if "fit" was a factor in the drop-out process.

4. *Why not question the entire attrition population over the past four years?*

This was a good point, however, it would necessitate a different study.

5. *Only complaining students would respond.*

If administered in a controlled classroom situation, with the support of the faculty, all students would likely fill out the survey.

6. *Random sampling would be better for evaluation.*

Sampling was not being done because the entire population of interest was being surveyed.

7. *Would the results be useful for curricular change?*

This would depend on what was found and whether or not the faculty chose to enact any recommendations.

8. *The study was seen as "potentially not dangerous and just not very useful".*

This in fact is true of a substantial amount of research. The usefulness would depend on the findings and the faculty's responsiveness to any recommendations.

In addition the department requested that the questionnaire be redesigned to include additional questions and to eliminate others. Various members of the department were concerned that the survey instrument held questions which could reflect negatively on the faculty. Further to this, several professors felt that the innate stress of year end would negatively affect the student's comments. However, since the same questionnaire was administered to the entire group at the same time, the perceptions held by students in any particular year would probably be similar to any other year. These concerns resulted in the researcher meeting with the Ethics Committee/faculty member and reviewing the questionnaire prior to the administration of the study. In the end, no changes were made to the questionnaire.

Explanations regarding the structure and intent of the questions satisfied

the concerns of the department and permission to proceed with the study was granted. Scheduling arrangements proceeded immediately. (It is interesting to note that the subsequent analysis of the data did not show any negative bias towards the faculty.)

Administration of the Instrument

The questionnaire was field tested with a group of engineering students at The University of Calgary prior to implementation. This resulted in minor categorical modifications to the instrument. After this modification a second package was couriered to the Department Head at the chosen university containing letters for all of the students. This introductory letter was given to each student by faculty members one week in advance, explaining the purpose of the study and the students' possible involvement in it (see Appendix A).

The letter excluded any mention of attrition in general, or at that school in particular. Rather, the letter referred to a study of the "circumstances of students who chose to enroll in Interior Design programs". It was critical to eliminate any possible bias prior to the questionnaire being administered. The letter also explained that anonymity was guaranteed for subjects and university, and that students had the right to withdraw from the study prior to answering the questionnaire.

On March 23 and 24, 1993, the questionnaire was administered. Respondents consisted of all students who agreed to complete the questionnaire. The researcher did not use any coercive influence, nor were the subjects remunerated. Advance notice of the upcoming questionnaire informed

the subjects of their option not to participate in the study. Their consent was through their willingness to complete the questionnaire (see Appendices A and B). In order to ensure anonymity, there were no consent forms for the subjects to sign. It was essential that neither forms nor questionnaires be traceable to the subjects.

Lack of names or identifying numbers on the questionnaire guaranteed the subjects anonymity. "No risk" to the subjects was ensured through anonymity of the individual and the institution, (the researcher was only interested in the program year of the subject). It was further hoped that guaranteed anonymity would allow students to be honest and forthright in their responses.

The researcher attended four classes and administered the questionnaire entirely within the class framework (years one and four on the first afternoon and two and three on the second morning). At their completion, questionnaires were returned to the researcher. Voluntary completion of this questionnaire was the extent of student involvement.

CHAPTER 4: RESULTS

Recording and Sorting of Data

All 162 questionnaires were returned to the researcher. All students who were in class chose to participate, however, eleven students were not present, resulting in a 94% response rate. It is assumed that these students were missing for a variety of reasons, and that their absence contributed no systematic error. The researcher was unable to contact these students.

Questionnaires were coded by number and analyzed using "Statview". Each entry was double checked for accuracy and completeness. Missing data were treated as missing for the associated question only.

The information collected provides a cross-sectional analysis of the 4-year program as it existed in March of the 1992/93 university year. The analysis of the data will be presented in four categories: (1) descriptive analysis, (2) comparative analysis, (3) correlational analysis and (4) regression analysis.

Descriptive Analysis

Demographics

Of the 162 subjects involved in the study, 60 (37%) were in first year, 29 (18%) in second year, 32 (20%) in third and 41 (25%) in fourth. This 50% drop in enrollment from first to second year is typical across university and college programs (Dietsche,1990; Domer & Johnson,1982; Summerskill,1962). However, as indicated in the literature review, (see page 24), one would have predicted a continuing decline in enrollment with each successive year. The actual increase in numbers is probably attributable to the re-entering of stop-

outs throughout the program, accounting for 25% of the total student body.

After one year (30 credit hours) of arts or sciences, students may apply for entrance to the Faculty of Architecture where, if selected, they are placed in a common first year. It is in the second year of the program that they specialize in Interior Design or Environmental Design. There appears to be a preference by women to chose Interior Design and men, Environmental Design. In Interior Design, 86% are women in second year, 87% in third and 90% in fourth.

It should be noted that the first year group is inherently different from the other three years in that they entered the course with 30 credits in arts or sciences (one year of university). This may account for a higher level of integration developed prior to admission to the faculty. (For further information on this program change, see page 60, Chapter 3.)

As evidenced in Table #1, students in the 21 to 25 year age bracket (63% of the entire population) dominate each year. The 17 - 20 year age group, represents 26% of the students, while only 17 students (10%) are over 26. These proportions are typical of university students.

Table #1:
Frequency distribution for age, split by year

Age	Total count	1st year	2nd year	3rd year	4th year
17 — 20	42	25	13	3	1
21 — 25	101	28	14	27	32
26 — 30	13	4	1	2	6
31 — 35	2	2	0	0	0
36+	2	1	0	0	1
TOTAL	160	60	28	32	40

In regard to home locale, 82 (51%) of the students are from the city in which the university is located, while 48 (30%) are from other urban centres (Table #2). The remaining 32 (19%) are from rural Canada and other countries.

Table #2 :
Frequency distribution for home locale, split by year

City	Total count	1st year	2nd year	3rd year	4th year
Univ. city	82	27	9	25	21
Other urbn					
Canadian	48	21	7	6	14
Rural Cdn.	24	9	11	1	3
Foreign	8	3	2	0	3
TOTAL	162	60	29	32	41

The largest percentage of students (49%) within each year are from households where the annual combined income of their parents is over \$55,000.

Most of the students throughout the four year program are single (93%). Only 5% are married, (one in first year, two in second, three in third and four in fourth). The remaining 2% are separated or "other".

Academic

The distribution of the combined grade 12 average marks revealed a concentration of students (83%) with marks over 75%: 47 (29%) had between 76% and 80%; 41 (26%) had 81% to 85%; and 45 (28%) received higher than 86%. The remaining 27 (17%) entered university with marks between 65% and 75%. The fourth year group had a higher percentage of students (65%) in the upper ranges (over 81%) than the first year group (32%).

Grade Point Average (G.P.A.) at the end of first semester, first year was consistent with these grade twelve averages: students who had done well in high school continued to do well in their first semester ($R=.039$). One hundred and thirty-one students (81%) had a G.P.A. of over 2.6 at the end of the first semester. This separates into 51 (85%) from the first year, 24 (83%) from the second year, 25 (78%) from the third year and 31 (76%) from the fourth year.

G.P.A. which students expected at the end of the present term revealed similar findings: 154 students (97%) expected to receive above a 2.6 G.P.A. The majority of this group expected between a 3.1 and 3.5 average. Forty-one (100%) of the fourth year students expected to receive at least a 2.6, while only 57 (95%) of the first year students expected this level.

Hours spent in study or working on projects after class does seem to increase with program year (Table #3).

Table #3:
Frequency distribution for hours after class, split by year

Hours	Total count	1st year	2nd year	3rd year	4th year
10—15	3	1	0	1	1
16—25	36	18	7	2	9
26—35	46	21	8	11	6
36—45	43	11	6	13	13
over 45	34	9	8	5	12
TOTAL	162	60	29	32	41

Twenty-five (61%) of the fourth year group reported spending over 36 hours per week on assignments, compared with 18 (56%) in third year, 14 (48%) in second year and 20 (33%) in first year. The cumulative number of hours per week is interesting to study from the viewpoint of workload: 3 people

(2%) reported spending from 10 to 15 hours per week, 36 (22%) from 16 to 25, 46 (28%) from 26 to 35, 43 (27%) from 36 to 45 and 34 (21%) work over 45 hours per week on projects.

The majority of students, 106 (65%), work in the studio. (Studios are large open areas where students have essentially their own space. This may include visual partitions, lights, drafting boards, drawers, and notice boards.) However, there appears to be a shift from studio work to working at home as the student progresses towards graduation. Fifty-seven (95%) of the first years work in studio compared with 21 (72%) in second year, 17 (53%) in third year and 11 (27%) in fourth year.

Environment

A diploma or bachelor degree was the highest level of education achieved by most students' mothers (59%). Included in this are five who had Master's degrees and one who had a doctorate. (It is interesting to note that these were all found in the 1st year group.) Sixty-six (41%) of the mothers had no post secondary schooling, in comparison to 50 (31%) of the fathers. Eighty-seven (54%) of the fathers had a diploma or bachelor degree, while 13 (8%) had master's degrees and 10 (6%) had doctorates.

Sixty percent of the students reported that parents, friends, teachers, and significant others influenced their decision to attend this university.

Many of the Interior Design students were employed while they attended university. Seventy-one (44%) worked from one to over 16 hours per week

(Table #4).

Table #4:
Frequency distribution for Employment split by year

Hours	Total count	1st year	2nd year	3rd year	4th year
none	91	37	17	13	24
1—5	17	2	6	5	4
6—10	21	7	4	3	7
10—15	16	7	1	5	3
16+	17	7	1	6	3
TOTAL	162	60	29	32	41

The percentage of people working increases with each program year, until the fourth year where it decreases: 23 (38%) in first year, 12 (41%) in second year, 19 (56%) in third year and 17 (41%) in fourth year.

The majority of parents (89%) expected that their children would go to university, however only 79% endorse their child's attendance at this particular university. It would appear that there is slightly more peer support than parental support with 93% of students reporting support and encouragement from other students.

The financial situation of the students represents a blended support system. Only 44 (27%) of the students reported that they were completely financing themselves in the 1992-93 school year. One hundred and two (64%) of the students received partial support from their parents, while 78 (48%) of the students had received loans, grants or scholarships. Forty-nine (30%) of the students reported that their parents' finances were being negatively affected by their being at university.

Psychological

The decision to attend university was the personal choice of 99% of the students. This is consistent with the literature, which contends that ownership in this decision will often result in retention.

When queried about the consistency of their perception of Interior Design, 124 students (77%) reported that their perception had changed. (Eighty-eight percent of the fourth year students reported a change in their perceptions, compared with 65% of the first year students.)

The majority of students (98%) do not have children (three people do: one in first year and two in fourth).

“All-nighters” is a term given to the practice of staying up all evening to complete assignments. In this Interior Design program 138 students (85%) reported that they experienced at least one “all nighter” in the last semester: 47 (78%) in first year, 26 (90%) in second year, 30 (94%) in third year and 35 (85%) in fourth year (Table #5).

Table #5:
Frequency distribution for “all-nighters”, split by year

Nights	Total count	1st year	2nd year	3rd year	4th year
one	12	5	3	2	2
two	16	4	2	4	6
three	29	15	2	3	9
four	81	23	19	21	18
none	24	13	3	2	6
TOTAL	162	60	29	32	41

The largest proportion of each group spent four or more all night sessions per semester: 23 (38%) in first year, 19 (65%) in second, 21 (65%) in

third and 18 (43%) in fourth.

Fifty-nine percent of the students reporting missing from one to four plus days in the last semester due to illness, signifying a notable loss of available instructional hours within the program. The number of students who missed class increased from 50% in first year to 76% in the final year.

Institutional

When asked if they felt that this program had a set pass/fail ratio, 98 (64%) of the students said no, while 56 (36%) felt that there was some prescribed ratio established. (Forty-two percent of the first year group thought that there was a ratio in place compared with 37% of the fourth year group.)

First year living arrangements are judged critical to whether or not the student is a persister, residence being the most positive influence on persistence, according to the literature (Table #6).

Table #6:
Frequency distribution for first year living arrangements, split by year

Locale	Total count	1st year	2nd year	3rd year	4th year
residence with family	30	10	8	4	8
off campus (alone)	71	26	9	18	18
off campus (friends)	22	8	5	4	5
other	26	9	5	4	8
other	12	6	2	2	2
TOTAL	161	59	29	32	41

The largest group lived at home during first year: 71 (44%). (This is likely

a result of demographics rather than choice.) Students in residence accounted for 19% of the group (30 students), while “off campus with friends or alone” and “other” made up the remaining 37% (60). Of the fourth years, 18 (44%) had lived with their families and 8 (20%) had lived in residence in first year.

Comparative Analysis

In addition to the basic demographics of the group, there was a series of questions which attempted to establish an awareness of more esoteric concepts, such as student’s feelings on certain issues. Questions which had yes/no responses were analyzed using percentages. In order to achieve greater discrimination within this area, Likert type scales were incorporated into the survey instrument, with a four point scale ranging from strongly disagree to strongly agree. To be consistent with the literature, the program year (question 1.1) was juxtaposed with data from academic integration, social integration, financial profile, support network, faculty access and stress perception to see if any obvious relationships between single variables and drop-out patterns emerged. (Program year was used throughout this study as the main indicator of attrition.)

Support Network

The support network of the student has been considered to be integral to persistence. Questions dealing with parents’ endorsement and program knowledge, and friends support and program knowledge tested whether or not the student had a support network. Responses were yes/no, with the yes

responses indicated in Table #7.

Table #7:
Indication of Support Network

QUESTION	OVERALL	YEAR 1	YEAR 2	YEAR 3	YEAR 4
3.2	125	42	20	26	37
3.3	118	39	22	23	34
3.4	150	56	26	30	38
3.5	28	12	6	4	6

key

- 3.2 Do your parents endorse your attendance at this university?
 3.3 Does your family know the difference between Interior Design and Interior Decorating?
 3.4 Do your friends support and encourage you while you attend this university?
 3.5 Do your friends know the full extent of what an interior designer does on a project?

Although parents' endorsement of the program is moderate, it appears to increase as the student nears graduation (question 3.2). In response to question 3.3 regarding parents' knowledge of the program there appears to be an increase as the student progresses through it, with the most understanding occurring when the student is in fourth year. While friends strongly support and encourage students throughout the program (question 3.4), their knowledge of what an interior designer does (question 3.5) is very limited with only 17% understanding the scope of a designers' work.

Financial

The literature states that finances also are often a leading reason cited by students for their leaving an institution, however, the actual impact of finances is

negligible. Students' responses to this series of questions on their financial profile were once again yes/no. These are represented through percentages, with only the yes responses being indicated in Table #8.

Table #8:
Indication of Financial Profile

QUESTION	OVERALL	YEAR 1	YEAR 2	YEAR 3	YEAR 4
4.1	44	18	5	10	11
4.2	102	36	17	22	27
4.3	78	26	16	14	22
4.4	49	15	10	11	13

key

4.1 Are you completely financing this year yourself?

4.2 Are your parents financially supporting you?

4.3 Do you have a student loan, scholarship or grant?

4.4 Do you think your being at University is negatively affecting the finances of your parents ?

The majority of students in all program years are receiving some type of financial assistance while they are in this course. In response to question 4.2, parents represent a consistent positive level of financial support across the program years (63%). In addition, almost half the students are receiving student loans, scholarships and /or grants (question 4.3).

There appears to be limited perception in any year that the students' attendance at this university negatively affects the parents' finances (question 4.4). There is not a wide variation in the responses to any of the questions regarding finances, signifying corresponding financial situations.

Social Integration

Social integration encompasses a largely intangible feature of a student's life on campus. Social integration questions measured how easy it was for a student to become part of the campus milieu. Whether one develops new friendships on campus with people of varying value systems or retains friendships from high school can play a critical role in students integrating into campus life.

Table #9:
Mean Indicators of Social Integration, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
8.1	3.42	.817	3.63	.486	3.10	1.175	3.34	.745	3.39	.891
8.2	3.11	.780	3.21	.555	3.00	1.102	3.03	.695	3.09	.860
*8.3	3.27	.947	3.65	.709	2.79	1.146	3.00	.950	3.29	.901
*8.4	3.30	.907	3.68	.537	2.65	1.143	3.06	.948	3.41	.836
*8.5	3.09	1.038	3.23	.998	2.75	1.123	2.71	1.023	3.41	.921
8.6	2.88	.862	3.06	.607	2.75	1.110	2.87	.751	2.70	1.031
*8.7	2.72	.846	2.94	.847	2.51	.911	2.56	.878	2.68	.722
*8.8	3.01	1.066	3.00	.991	2.72	1.192	3.03	1.062	3.22	1.074

key

- 8.1 The student friendships I have developed at this University have been personally satisfying.
 8.2 My interpersonal relationships with other students have had a positive influence on my personal growth. . .
 8.3 It has been difficult for me to meet people .
 8.4 It has been difficult for me to make new friends with other students.
 8.5 Few of the students would be willing to listen to me and help me if I had a personal problem.
 8.6 My interpersonal relationships with other students have had a positive influence on my intellectual development . . .
 8.7 Most students at this University have values and attitudes different from mine.
 8.8 Most of my friends do not attend University.
 * Denotes recoded inverse question

Table #9 indicates the collective responses based on a Likert type scale (strongly disagree was represented by 1, disagree by 2, agree by 3 and strongly agree by 4). New student friendships at this university appear to be personally satisfying to subjects across the years ($M=3.42$), with the strongest level of satisfaction occurring in first year (question 8.1). The level of satisfaction evidenced in the means drops in second year then steadily increases towards fourth year.

This same pattern is repeated in response levels when the students looked at the influence of those relationships on their values, growth and attitudes (question 8.2). The mean for this response is still positive ($M=3.11$). Students appear to have little difficulty in meeting new people (question 8.3) and making friends with other students (question 8.4). It is evident that once again the first year group has the least difficulty, with second year experiencing slightly more difficulty than the other groups. Again this decreases as the student progresses towards fourth year. In response to question 8.5, most students felt that their peers would be supportive of them in dealing with personal problems ($M=3.09$). However, students in second and third year seem to have less support than their counterparts in first and fourth years.

Relationships with fellow students appears to positively influence intellectual development and interest in interior design ($M=2.88$) (question 8.6). First year again feels the most positive about this impact. Regarding attitudes and values (question 8.7), students felt that these were consistent with other students' at this university ($M=2.72$). Friendships are predominately with other university students.

Examining the variance of responses for questions regarding social integration, second year students have the widest response variance, indicating the most heterogeneity of all four groups. Contrasted with this is the narrow variance of responses for first year students, indicating more similarity one to the other in terms of social integration. These results are noteworthy in that they reflect the influence of the change in entrance requirements to the program: the first year student coming from an arts or science background versus the second year student who has had no external program influence (for further explanation see page 60, Chapter 3). A higher degree of heterogeneity would normally be expected in a typical first year, where students have a wider range of personal diversity as they enter university than is evidenced in the above standard deviations.

Stress

Another variable within the drop-out process is stress. Although not directly associated with any particular aspect of campus life, stress results from a variety of influential factors: academic and social integration, academic satisfaction, workload, time, balanced lifestyle, rest, and anxiety (Fimian,1988; Sheridan & Smith,1987; Tinto,1975). Table #10 indicates responses to the perception of stress based on a Likert type scale (strongly disagree was represented by 1, disagree by 2, agree by 3 and strongly agree by 4). Inverse questions were often used to eliminate response set. These were recoded for consistency prior to analysis.

Table #10:
Mean Indicators of Stress, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
10.3	3.19	1.006	3.01	.873	2.75	1.354	3.46	.915	3.53	.809
*10.4	2.79	1.024	2.66	.837	2.51	1.184	3.15	1.051	2.87	1.077
10.5	3.17	1.084	2.96	1.041	2.75	1.380	3.62	.751	3.41	.974
*10.6	2.96	1.095	2.83	1.020	2.62	1.265	3.09	1.118	3.29	.981
10.7	2.24	.946	1.88	.825	2.31	.930	2.78	.906	2.31	.960
10.8	3.08	.942	3.05	.811	2.75	1.185	3.08	.928	3.36	.888
10.9	2.72	1.103	2.45	.964	2.69	1.365	3.15	.920	2.82	1.138
10.10	2.90	.979	2.76	.810	2.51	1.299	3.28	.888	3.07	.905
10.11	1.96	.826	1.85	.709	2.31	.930	1.87	.907	1.95	.805
*10.12	2.29	.959	1.91	.829	2.46	.744	2.46	1.107	2.58	.999

key

- 10.3 The workload makes me feel pressured.
 10.4 There is adequate time to complete the work satisfactorily.
 10.5 It is difficult to achieve a balance between school work and leisure activities.
 10.6 I am able to get sufficient rest.
 10.7 I often leave class feeling angry.
 10.8 I am frequently anxious about my school work.
 10.9 As the year progresses, I feel less energy and enthusiasm for what I am doing.
 10.10 The amount of work required is excessive.
 10.11 The amount of work assigned is too difficult.
 10.12 All of the work I am assigned is critical to my professional growth.
 * Denotes recoded inverse question

Pressure associated with workload (question 10.3) is perceived to be relatively high for all years, with fourth year students experiencing the most pressure (M=3.53). Students appear to have no difficulty with the time allotted to perform the task satisfactorily (question 10.4), as evidenced by an overall mean of 2.79.

The ability to achieve a balance between school work and leisure activities (question 10.5) eludes most of the students ($M=3.17$). Corroborating this is the fact that they are unable to get sufficient rest ($M=2.96$) (question 10.6). Although students often leave class feeling anxious about their school work (question 10.8), they are not angry about the situation (question 10.7). They do, however, appear to be slightly less energetic and enthusiastic as the year progresses ($M=2.72$), with the third year experiencing the most ennui (question 10.9). In response to question 10.10, all years felt that the amount of work required is excessive ($M=2.90$), however, it is not perceived as difficult (question 10.11). Not all of the work is regarded as being critical to the students' professional growth ($M=2.29$).

Second year students again have the widest variance of responses in eight out of 10 questions, while first year students have the narrowest variance on five questions, indicating more homogeneity amongst the first year students than the second year students.

Academic integration

Table #11 details the responses for questions associated with academic integration—an area critical to student retention. According to the literature, this, balanced with social integration will usually lead to persistence. Not to be confused with academic achievement, this area focuses on the academic experience and its' influences on persistence, not on grades.

Table #11:
Mean Indicators of Academic Integration, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
6.1	2.92	.796	3.25	.728	2.65	.769	2.65	.827	2.82	.738
6.2	3.23	.800	3.43	.647	2.82	.889	3.09	.928	3.34	.728
6.3	2.72	.740	3.11	.585	2.37	.677	2.53	.718	2.56	.776
*6.4	2.47	.902	2.83	.785	2.46	.922	2.06	.840	2.26	.923
6.5	3.19	.838	3.40	.588	2.72	1.099	3.15	.808	3.24	.860
6.6	2.68	1.155	2.86	1.049	2.55	1.088	2.62	1.264	2.56	1.266
6.7	2.74	.787	2.94	.729	2.51	.986	2.58	.720	2.73	.708

key

6.1 I am satisfied with the extent of my intellectual development since enrolling at this University.

6.2 My academic experience has had a positive influence on my intellectual growth and interest in ideas.

6.3 I am satisfied with my academic experience at this University.

6.4 Few of my courses this year have been intellectually stimulating.

6.5 My interest in ideas and intellectual matters has increased since coming to this University.

6.6 I am more likely to attend a cultural event (i.e. a concert, the ballet, a lecture, or art show) now than ...

6.7 I have received the marks that I anticipated I would.

* Denotes recoded inverse question

All questions, with the exception of 6.4 (an inverse question) are direct positive statements. The responses to these were positive, with first year students rating their experiences the highest, second year students the lowest and then gradually increasing to the fourth year (with the exception of question 6.6). Question 6.4 was the only question which evoked slightly negative responses from the students, with third and fourth year students expressing the least amount of satisfaction with the intellectual stimulation provided by their courses. Overall it would appear that the entire population is positively integrated from an academic viewpoint. This integration should positively affect

goal commitment. The most homogenous group in their responses was once again first year. Fourth year displayed the most diversity on three out of the seven questions.

Faculty Access

Although faculty access is not a critical component in the drop-out process, the relationship of faculty to students has been associated with a positive experience on campuses and with retention when faculty assumes a parental role model (Pascarella & Terenzini, 1978, 1980; Whitson, 1989). Table #12 outlines the student responses to statements concerning student/faculty relationships. The responses to this set of statements do not form a pattern of high positive or high negative associations. All of the means lie between 2 and 3, indicating neutrality.

Table #12:
Mean Indicators of Faculty Access, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
7.1	2.56	.932	2.60	.942	2.62	.728	2.65	1.066	2.41	.948
7.2	2.70	.811	2.80	.732	2.67	.723	2.65	.865	2.56	.923
7.3	2.48	.828	2.53	.809	2.51	.829	2.56	.914	2.26	.775
7.4	2.29	2.729	1.91	.926	3.34	6.002	2.00	1.136	2.31	1.192
7.5	2.37	.939	2.55	.832	2.44	1.088	1.96	.967	2.30	.891

key

- 7.1 My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.
 7.2 My nonclassroom interactions with faculty have had a positive influence on my intellectual development . . .
 7.3 My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations.
 7.4 Since coming to this University, I have developed a close, "mentor" like relationship with at least one faculty member.
 7.5 I am satisfied with the number of opportunities to meet and interact with faculty members.

The means for questions 7.1, 7.2, 7.3 and 7.5 did not vary much from one year to another, with most of the overall means falling close to mid point signifying neutrality towards the perception of faculty access. The strongest responses are to question 7.4 on “mentor-like” relationships. There is a variance of responses across the years (S.D.=2.729) with an exceptionally wide variance evidenced in the second year responses (S.D.=6.002). A high negative response by first year students and a high positive response by second year students may be indicative of the non-familiarity of the first year students with the purpose of the “crit” system, and the positive relationship developed in second year with the crits and professors. (Crits are sessional instructors who are assigned to a group of students for different projects. Their role is to critique the students’ work and advise them on various aspects of the assignment. “Crit” is also the term used for meetings between students and these sessional instructors) The low means in third and fourth years are possibly attributed once again to familiarity with the crit system; however, this appears to have a negative effect on the students’ perception of the system.

The variance of responses to the perception of faculty access did not develop into a pattern. While divergence throughout is minimal, the second year students’ response to question 7.4 regarding the positive influence of faculty on career displays a distinct variance amongst the respondents (S.D.=6.002).

Psychological

The psychological factors examined in Table #13 considered the motivation and commitment of students to their goals. Individual motivation is closely linked to goal commitment. Students with low institutional commitment are most likely to be non-persisters while those with high institutional commitment are persisters (Marks, cited in Pantages & Creedon, 1978).

Table #13:
Mean Indicators of Motivation/Commitment, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
9.1	3.50	.947	3.70	.696	2.79	1.292	3.50	.984	3.73	.708
9.2	3.27	.899	3.77	.524	2.65	1.078	3.02	.801	3.22	.962
*9.3	3.05	.980	3.13	.873	2.75	1.123	2.93	1.076	3.24	.916
*9.4	3.13	.886	3.38	.783	2.75	.951	3.00	.762	3.12	.980
10.1	2.82	1.739	2.71	.804	3.17	3.723	2.53	.983	2.97	.758
10.2	2.50	.914	2.58	.850	2.55	.985	2.06	.914	2.70	.873

key

9.1 It is important for me to obtain a bachelor's degree.

9.2 I am confident that I made the right decision in choosing to attend this University.

9.3 I am here for the practical knowledge which this program gives me; graduating is unimportant.

9.4 Getting good grades is not important to me.

10.1 I am satisfied with my marks.

10.2 The faculty assessment of my academic performance this year is consistent with my ability.

* Denotes recoded inverse question

A high level of goal commitment (question 9.1) is demonstrated by all years, as indicated by a 3.50 mean. Once again agreement in first year is highest, then drops in second year and increases through to the fourth year. This is consistent with previous research which found that commitment

increases proportionately as the student nears graduation, and conversely that academically integrated students will have a more positive goal commitment (Tinto,1975; Brigham et al,1982).

In analyzing the responses to these questions, institutional commitment (question 9.2) appears high in all four years with the familiar pattern of highest commitment in first year, lowest in second and increasing to fourth evidenced again. Graduating is important to all students (question 9.3), the practical knowledge gained being secondary to the degree ($M=3.05$). The attainment of good grades (question 9.4) appears to be important to the students ($M=3.13$), with the majority being satisfied with their marks ($M=2.82$) (question 10.1). Second year students again display the widest variance in their response to this question ($S.D=3.723$). Question 10.2 regarding faculty assessment of student performance and student's assessment of their own ability resulted in impartial responses from the students ($M=2.50$).

Second year appears to have the greatest diversity in response to these questions. On question 10.1 regarding satisfaction with marks the SD for second year was 3.723 and for fourth year .758. There seems to be a trend towards greater homogeneity as the students approach graduation.

Institutional

Institutional commitment is a measure of how strongly connected the student is to the school. Previous research identifies this as another factor related to persistence (Dietsche,1990). Table #14 examines the strength of this connection.

Table #14:
Mean Indicators of Institutional factors, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
11.1	3.05	.773	3.30	.646	2.55	.827	3.15	.628	2.90	.846
11.2	2.93	.806	3.07	.651	2.65	.974	3.03	.740	2.99	.916
*11.3	2.10	.943	2.16	.977	2.31	.930	2.09	.928	1.87	.900
11.4	2.97	.884	3.16	.693	2.96	.906	3.00	.984	2.68	.986
11.5	2.31	.881	2.63	.802	2.34	.897	2.00	.916	2.07	.818
11.6	2.13	.977	2.21	.901	2.14	.932	1.83	1.036	2.27	1.059

key

11.1 The Interior Design program at this University is one of the best in North America.

11.2 The "case based" teaching method, where students are given a problem to solve, is the most effective way ...

11.3 The practice of "crits within the studio" lacks cohesion.

11.4 I view "crits" as being essential to my understanding of the assignments.

11.5 The courses are well structured to help me learn from the start of the year to the end.

11.6 Financial assistance from The University is readily available in terms of loans ,grants and scholarships.

* Denotes recoded inverse question

There is a perception by the students (question 11.1) that this is one of the better programs for interior design in North America (M=3.05). However, the distribution of the results does not fit any particular pattern (such as positive towards negative or heterogenous towards homogenous). This is one of the principal responses throughout the questionnaire regarding institutional commitment.

"Crits" were seen as essential to the understanding of assignments (M=2.97). In addition, students felt that the practice of crits within the studio (question 11.3) did not lack cohesion (M=2.10). Students in general disagreed with the statement that courses were well structured (M=2.31). All program years felt that financial assistance from the university could be made more

available (M=2.13).

With regard to the diversity of responses first year students had the narrowest range on four questions while fourth year students had the broadest range on three, overlapping on two questions. A strong initial commitment to this university in first year could possibly be the reason for more homogenous responses.

Indices for Variables of Interest

Individual student scores to questions in each of the main measurement clusters (i.e. social integration, academic integration, etc.) were collapsed by addition into a single index. This index was then used to locate the students' position on all measurement clusters (Table #15).

Table #15:
Measurement Cluster, split by year

QUESTION	OVERALL		YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	M	S D	M	S D	M	S D	M	S D	M	S D
support	2.63	.765	2.50	.805	2.57	.790	2.60	.724	2.87	.686
financial	6.53	.870	6.49	.972	6.62	.775	6.46	.761	6.59	.880
stress	27.28	6.244	25.32	5.374	25.46	8.422	30.00	4.912	29.24	5.356
soc. int.	21.90	4.044	23.36	2.700	19.55	5.342	20.75	3.750	22.42	3.908
acad int.	20.03	3.531	22.00	2.936	18.14	4.107	18.67	2.903	19.53	3.026
fac. acc.	12.44	4.337	12.50	2.891	13.71	7.542	11.84	3.802	11.95	3.413

key **includes questions**

1.support 3.2: Do your parents endorse your attendance at this university?
 3.3: Does your family know the difference between Interior Design and Interior Decorating?
 3.4: Do your friends support and encourage you while you attend this university?
 3.5: Do your friends know the full extent of what an interior designer does on a project?

- 2.financial** 4.1: Are you completely financing this year yourself?
 4.2: Are your parents financially supporting you?
 4.3: Do you have a student loan, scholarship or grant?
 4.4: Do you think your being at University is negatively affecting the finances of your parents ?
- 3.stress** 10.3 The workload makes me feel pressured.
 10.4 There is adequate time to complete the work satisfactorily.
 10.5 It is difficult to achieve a balance between school work and leisure activities.
 10.6 I am able to get sufficient rest.
 10.7 I often leave class feeling angry.
 10.8 I am frequently anxious about my school work.
 10.9 As the year progresses, I feel less energy and enthusiasm for what I am doing.
 10.10 The amount of work required is excessive.
 10.11 The amount of work assigned is too difficult.
 10.12 All of the work I am assigned is critical to my professional growth.
- 4.social int.** 8.1 The student friendships I have developed at this University have been personally satisfying.
 8.2 My interpersonal relationships with other students have had a positive influence on my personal. . .
 8.3 It has been difficult for me to meet people .
 8.4 It has been difficult for me to make new friends with other students.
 8.5 Few of the students would be willing to listen to me and help me if I had a personal problem.
 8.6 My interpersonal relationships with other students have had a positive influence on my intellect. . .
 8.7 Most students at this University have values and attitudes different from mine.
 8.8 Most of my friends do not attend University.
- 5.acad. int.** 6.1 I am satisfied with the extent of my intellectual development since enrolling at this University.
 6.2 My academic experience has had a positive influence on my intellectual growth and interest. . .
 6.3 I am satisfied with my academic experience at this University.
 6.4 Few of my courses this year have been intellectually stimulating.
 6.5 My interest in ideas and intellectual matters has increased since coming to this University.
 6.6 I am more likely to attend a cultural event (i.e. a concert, the ballet, a lecture, or art show) . . .
 6.7 I have received the marks that I anticipated I would.
- 6.fac. acc.** 7.1 My nonclassroom interactions with faculty have had a positive influence on my personal . . .
 7.2 My nonclassroom interactions with faculty have had a positive influence on my intellect. . .
 7.3 My nonclassroom interactions with faculty have had a positive influence on my career. . .
 7.4 Since coming to this University, I have developed a close, "mentor" like relationship. . .
 7.5 I am satisfied with the number of opportunities to meet and interact with faculty members.

The support cluster comprised four statements requiring yes/no responses. The highest possible index per student would be four (0 points for no, one for yes), reflecting a strong support network. The resulting mean of 2.63 for the combined scores indicates a slightly positive perception of support. This increased as the student neared graduation. First year appears to be slightly more heterogenous than the other three years ($SD = .805$).

Unlike the support cluster, there is no perceptible pattern to the responses on financial profile. Based on yes/no responses, where two points were assigned to those factors considered detrimental to the students' financial situation and one point to those which had a more positive bearing, a

four would represent a strong financial base and an eight would reflect a weaker one. (The numerical assignment was arbitrary.) The mean of 6.5 represents a negative perception by all participants of their financial situation. The first year students appear to be the most diverse in their reaction to this question ($SD=.972$).

The stress index comprised 10 questions, based on a Likert type response: a score of 40 symbolizing the highest stress score. The resulting mean of 27.28 indicates an above average level of stress perceived across the program. All years are within a few points of each other, with third year students experiencing the most stress, and first year students the least. The second year students have more diversity in their responses than the other years, while third year has the least.

The social integration index (S.I.) was calculated from eight responses given to Likert scaled responses. The highest possible S.I. was 32. The mean of 21.90 indicates a moderate degree of integration, being slightly above a median score of 16. Second year students again demonstrated a wider variance of responses than the other years.

A high degree of academic integration (A.I.) would be indicated by an accumulated score of 28 (based on seven statements). The actual mean of 20.03 reflects a relatively high level of integration with first year demonstrating the most integration and second year the least. Characteristically the A.I. score increased as the students moved towards graduation. The most diversity is again displayed by the second year group ($SD =4.107$).

The index for faculty access is made up of five statements, the highest

possible score for faculty access is 20 points. The mean of 12.44 would indicate a neutral relationship with the faculty. Although second year students experience the most positive relationships with faculty and show a broader divergence in their responses, the mean is not significantly greater than any other year.

Correlational Analysis

Correlational statistics were calculated on a variety of questions. Two different types of correlations are summarized below. The first was a comparison of questions thought to be measuring the same variable (Table #16). The second was a comparison of related variables where predictable relationships were anticipated, i.e., workload and stress (Table #17). The strongest correlations were expected between academic integration and attrition and social integration and attrition.

In Table #16 correlations were anticipated between several pairs of questions pertaining to workload, grading, institutional commitment, rest and goal commitment. These correlations represent a check for internal consistency within the survey instrument.

Because of the number of variables which needed to be addressed in the questionnaire it was not feasible to include redundant questions. However positive correlations were expected between pairs of questions investigating related content. (Several of the questions had been adapted from Pascarella and Terenzini's 1980 study on attrition, reducing noise within the instrument.)

Table #16:
Related Questions

CORRELATED QUESTIONS			CORRELATION	P VALUES
1	10.3 10.5	The workload makes me feel pressured Balance between schoolwork & leisure: difficult. . .	.641	<.0001
2	10.3 10.10	The workload makes me feel pressured The amount of work required is excessive	.725	<.0001
3	6.7 10.1	I have received the marks that I anticipated I would I am satisfied with my marks	.204	.0094
4	10.4 10.10	There is adequate time to complete the work The amount of work required is excessive	.555	<.0001
5	9.4 9.1	Getting good grades is not important to me It is important for me to obtain a bachelor's degree	.462	<.0001
6	9.4 9.3	Getting good grades is not important to me I'm here for the practical knowledge	.457	<.0001
7	6.7 F.A.I.	I have received the marks that I anticipated I would Faculty assessment index	.273	.0005
8	10.3 10.4	The workload makes me feel pressured There is adequate time to complete the work. . .	.461	<.0001
9	10.4 10.6	There is adequate time to complete the work. . . I am able to get sufficient rest	.471	<.0001
10	11.1 9.2	This Interior Design program is one of North America's. . I am confident with my decision in choosing this . . .	.529	<.0001
11	10.3 10.7	The workload makes me feel pressured I often leave class feeling angry	.387	<.0001
12	10.6 10.9	I am able to get sufficient rest Energy and enthusiasm decrease as year progresses	.337	<.0001

For example, there was a positive correlation between questions concerning workload. The quantity of work was positively related to feelings of pressure, anger, stress and the inability to achieve a balance between schoolwork and leisure. As the amount of work increased, students indicated that the ability to complete it satisfactorily in the time allowed decreased.

In addition the correlation between perception of schools' standing and confidence in choosing it supports confidence in the internal consistency of the survey instrument. Questions concerning grading, marks anticipated, marks satisfaction, degree importance and course structure further support the instrument's internal consistency. Although the internal consistency of the instrument is supported through these correlations, they were not as high as anticipated.

The sets of questions examined in Table #17, tested predicted correlations between different variables based on previous research. The questions examined were grouped into four areas: year of program with index; index with index; index with variables from research findings; year of program with variables from research findings. The strongest relationships anticipated were those involving questions in the areas of academic and social integration. Correlations were tested using Pearson r .

The strongest correlation of $r=.429$, $p < .0001$ was obtained in test #8 between academic integration index and social integration index. This supports previous research which reports that the persister is likely to be well integrated socially and academically (Tinto, 1975). Goal commitment, represented by tests 10 and 11 also had significant correlations ($r=.406$, $p < .0001$; $r=.376$, $p < .0001$). Both the social and academic indices are linked to achieving one's goals as was predicted from Tinto's research.

Table #17:
Predicted Correlations

CORRELATED QUESTIONS			CORRELATION	P VALUES
year of program with index				
1	1.1 S.N.I.	Year of program Support Network index	.178	.0269
2	1.1 F.I.	Year of program Financial Index	.029	.7216
3	1.1 S.I.	Year of program Stress Index	.300	.0001
4	1.1 A.I.I	Year of program Academic integration index	-.292	.0002
5	1.1 F.A.I	Year of program Faculty access index	-.074	.3499
6	1.1 S.I.I	Year of program Social integration index	-.103	.1954
index with index				
7	S.I. F.A.I	Stress Index Faculty access index	-.270	.0006
8	A.I.I S.I.I	Academic integration index Social integration index	.429	<.0001
9	A.I.I F.A.I	Academic integration index Faculty access index	.231	.0034
index with variables from prior research findings				
10	S.I.I 9.1	Social integration index It is important for me to obtain a bachelor's . .	.406	<.0001
11	A.I.I 9.1	Academic integration index It is important for me to obtain a bachelor's . .	.376	<.0001
12	A.I.I 10.2	Academic integration index The faculty assessment of my academic. . .	.361	<.0001
13	S.I. 10.2	Stress Index The faculty assessment of my academic. . .	-.333	<.0001
14	S.I. 10.1	Stress Index I am satisfied with my marks	-.197	.0123

Table #17: cont.
Predicted Correlations

CORRELATED QUESTIONS			CORRELATION	P VALUES
year of program with variables from prior research findings				
15	1.1	Year of program		
	5.6	Residency in first year	-.041	.6102
16	1.1	Year of program		
	5.4	How many hours per week are you employed	.048	.5410
17	1.1	Year of program		
	9.2	I am confident that I made the right decision . . .	-.214	.0061
18	1.1	Year of program		
	11.1	The Interior Design program at this University . . .	-.131	.0987
19	1.1	Year of program		
	1.10	Have you stopped out and returned	.018	.8252

Faculty assessment of academic abilities is positively related to the academic integration index ($r=.361$, $p<.0001$) and negatively related to stress ($r=-.333$, $p<.0001$). Stress appears to be related to program year ($r=.300$, $p<.0001$) and negatively related to faculty access ($r=-.270$, $p=.0006$) and marks satisfaction ($r=-.197$, $p=.0123$). Tests 4 and 9 involving academic integration did show a relationship between academic integration and persistence and faculty access ($r=-.292$, $p=.0002$; $r=.231$, $p=.0034$).

Anticipated relationships between program year and residency ($r=-.041$, $p=.6102$), hours of employment ($r=.048$, $p=.5410$), decision confidence ($r=-.214$, $p=.0061$), institutional commitment ($r=-.131$, $p=.0987$) and stopping out ($r=.018$, $p=.8252$) did not support past research. Historically first year residency has been a strong indicator of attrition: if students live in residence they have a stronger possibility of persisting (Spady, 1970; Pascarella & Terenzini, 1980).

Hours of employment are usually inversely related to persistence; the more a student works the higher the possibility of them dropping out of school (Churchill,1981; Billson & Terry,1982; Iffert,1958). Confidence in one's decision to attend university is positively related to persistence (Summerskill,1962). The closer a career goal is tied to a particular university, the stronger the institutional commitment (Pantages & Creedon, 1978). Research has found that stopouts persist once they re-enter the university system and out-perform the typical persister (Kesselman,1976).

Further relationships among categorical variables were investigated through the use of contingency tables (Table #18). Although the sample was not randomly chosen, these were examined to test the probability that relationships were due to measurement error.

The literature suggests that the strongest single variable impacting persistence is grade point average (G.P.A.) out of grade 12 and this appears to be true in the present study [Chi Square (3, $N=162$)=29.50, $p=.0032$]. Home locale is strongly related to year of program [Chi Square (3, $N=162$)=27, $p=.0014$]. Staying on campus in first year tends to be one of the strongest predictors of persistence due to the high level of social integration it affords (Johnes,1990). However, in this cohort, the majority of students (51%) are from the city that the university is in, making staying in the family home a possibility. The relationship of hours of employment and "all-nighters" is evidenced in a Chi Square of 33.3 with .0067 level of significance [Chi Square (3, $N=162$)=33.3, $p=.0067$]. The more one works, the higher the probability that they will have all-nighters.

Table # 18:
Contingencies

CONTINGENCY VALUES			CHI SQUARE df=3 N=162	P VALUES
1	1.1	Year of program	14.53	.100
	1.6	Marital status		
2	1.1	Year of program	13.80	.3131
	1.7	Mother's highest level of post-secondary education		
3	1.1	Year of program	12.59	.3993
	1.8	Father's highest level of post-secondary education		
4	1.1	Year of program	11.37	.497
	1.9	Who was most influential in your decision to attend. .		
5	1.1	Year of program	29.50	.0032
	2.1	Combined ave. out of grade 12		
6	1.1	Year of program	3.22	.350
	5.2	Do you have children		
7	5.4	How many hours per week are you employed	33.3	.0067
	5.7	How many "all-nighters" did you have last semester		
8	1.10	Have you stopped out and returned	6.138	.1051
	2.4	What do you expect your G.P.A. to be at end of term		
9	1.1	Year of program	14.175	.2897
	2.3	What was your G.P.A. at end of term, first semester		
10	1.1	Year of program	27.042	.0014
	1.4	Home locale		
11	1.1	Year of program	5.388	.1435
	3.7	Did your parents expect that you would go to. . .		
12	1.1	Year of program	1.342	.7191
	5.1	Was it your decision to go to university		
13	1.1	Year of program	16.970	.1507
	5.7	How many "all-nighters" did you have last semester		

Other relationships cited in previous research between program year and parents' education (tests 2 & 3), decision ownership (tests 4 & 12), G.P.A. at end of term first semester (test 8), parents' expectations (test 11), all

nighters (test 1) or stopping out and expected G.P.A. (test 6) were not found in this study. No relationship between program year and marital status (test 1) or program year and children (test 6) was found. This may have been due to a very small percentage of the population being married (5%) or having children (2%).

Analysis of variance tests were performed on the six indices to determine if they were being affected by program year. Only academic integration, stress and social integration proved to have significant F-Values. The post hoc Scheffé test was then used to determine exactly where the differences in means were (Tables 19, 20, and 21).

Table #19:
Anova for Academic Index.

	Df	Sum of Square	Mean Square	F-Value	P-Value
Year	3	395.376	131.792	12.975	<.0001
Residual	155	1574.398	10.157		

Scheffé for Academic Index, split by year, 5% significance

years	Mean Diff.	Crit. Diff.	P-Value
one & two	3.857	2.067	<.0001 S
one & three	3.323	1.998	.0001 S
one & four	2.463	1.832	.0031 S
two & three	-.535	2.349	.9372
two & four	-1.394	2.208	.3677
three & four	-.859	2.144	.7335

Year one differed consistently from the other years when tested for academic integration, with the strongest variance occurring between first and second year.

Table #20:
Anova for Stress Index

	Df	Sum of Square	Mean Square	F-Value	P-Value
Year	3	713.368	237.789	6.763	.0003
Residual	156	5485.407	35.163		

Scheffé for Stress Index, split by year, 5% significance

years	Mean Diff.	Crit. Diff.	P-Value
one & two	-.142	3.846	.9997
one & three	-4.678	3.679	.0060 S
one & four	-3.922	3.407	.0164 S
two & three	-4.536	4.337	.0363 S
two & four	-3.780	3.109	.0844
three & four	.756	3.953	.9614

Table #21:
Anova for Social Integration Index

	Df	Sum of Square	Mean Square	F-Value	P-Value
Year	3	337.241	112.414	7.757	<.0001
Residual	155	2246.344	14.493		

Scheffé for Social Integration Index, split by year, 5% significance

years	Mean Diff.	Crit. Diff.	P-Value
one & two	3.810	2.447	.0004 S
one & three	2.612	2.369	.0239 S
one & four	.937	2.211	.6980
two & three	-1.198	2.759	.6812
two & four	-2.873	2.624	.0253 S
three & four	-1.675	2.552	.3320

Significant variance in perception of stress (Table 20) occurred between first and third years, between first and fourth years and between second and third years. Scores on the social integration index for year one varied significantly from years two and three. These variances will be elaborated upon in Chapter five.

Regression Analysis

According to the literature, single variables influence attrition. However, it is actually a “complex web” of factors which determine whether a student drops-out or graduates. In order to facilitate analysis, questions which studied related concepts such as integration and support networks were grouped together into main measurement clusters. The responses to these questions were collapsed by addition into an index which was then used to locate the students’ position on all measurement clusters. The six resulting indices were: stress, academic integration, social integration, support network, faculty access, and financial profile. A series of simple and polynomial regressions were initially performed in order to understand the interaction of these independent variables when regressed with stress (Tables 22 through 24). (Polynomial regression was used when a non-linear relationship was suggested.)

Table 22:
Stress Index vs. Social Integration Index

count	157				
number missing	5				
R	.321				
R Squared	.103				
Adjusted R Squared	.073				
RMS Residual	5.997				

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	5	621.807	124.361	3.458	.0055
residual	151	5430.716	35.965		
total	156	6052.522			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	--105.433	242.140	-105.433	-.435	.6639
social int. in.	35.968	75.335	23.402	.477	.6337
social in. o ^2	-4.341	8.959	-114.121	-.485	.6287
social in. o ^3	.271	.512	226.875	.530	.5971
social in. o ^4	-.008	.014	-205.173	-.591	.5552
social in. o ^5	1.001E-4	1.522E-4	69.268	.658	.5118

Table 23:
Stress Index vs. Faculty Index

count	159				
number missing	3				
R	.308				
R Squared	.095				
Adjusted R Squared	.065				
RMS Residual	6.034				

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	5	582.714	116.543	3.201	.0089
residual	153	5570.720	36.410		
total	158	6153.434			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	-9.625	46.328	-9.625	-.208	.8357
faculty in.	13.700	19.020	9.540	.720	.4724
fac. in. o ^2	-1.746	2.846	-52.645	-.613	.5406
fac. in. o ^3	.101	.194	140.845	.519	.6047
fac. in. o ^4	-.003	.006	-180.066	-.454	.6505
fac. in. o ^5	2.547E-5	6.120E-5	82.350	.416	.6779

Table 24:
Stress Index vs. Academic Index

count	157				
number missing	5				
R	.314				
R Squared	.099				
Adjusted R Squared	.069				
RMS Residual	6.053				

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	5	604.935	120.987	3.302	.0074
residual	151	5533.345	36.645		
total	156	6138.280			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	320.463	781.110	320.463	.410	.6822
academic in.	-110.947	213.510	-61.504	-.520	.6041
acad. in. o ^2	14.482	22.898	321.546	.632	.5280
acad. in. o ^3	-.866	1.205	-599.806	-.719	.4733
acad. in. o ^4	.024	.031	484.310	.785	.4339
acad. in. o ^5	-2.645E-4	3.169E-4	-144.508	-.835	.4052

The amount of variance explained by the polynomial regressions is very small, however it is statistically significant. It is difficult to interpret the model, except to suggest differential effects of amounts of stress. Social

integration had the most apparent relationship with stress ($r=.321$, $p=.0055$) followed by academic integration ($r=.314$, $p=.0074$), and faculty access ($r=.308$, $p=.0089$). These relationships were not due to random measurement error.

Further analysis using multiple regression techniques were performed to examine any interdependent relationships which might be impacting stress. "A multiple regression equation uses variables that are known to individually predict (correlate with) the criterion to make a more accurate prediction . . . it determines not only whether variables are related, but also the degree to which they are related" (Gay, 1992, p.442).

Table #25 outlines the impact of stress on all five indices to determine the most influential relationships on that process and the interaction effect within it.

Table 25:
Stress Index vs. Five Independents

count	147
number missing	15
R	.379
R Squared	.143
Adjusted R Squared	.113
RMS Residual	6.005

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	5	850.582	170.116	4.717	.0005
residual	141	5084.819	36.063		
total	146	5935.401			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	20.072	5.007	20.072	4.009	<.0001
support in.	-.751	.687	-.088	-1.093	.2761
faculty index	-.460	.122	-.318	-3.782	.0002
academic in.	.004	.172	.002	.025	.9802
soc. integ in.	.234	.147	.149	1.584	.1153
financial in.	1.478	.574	.205	2.575	.0110

When set into a multiple regression, a relationship between stress and the individual indices occurred, although it was not strong, $r=.379$. The regression analysis equation considers the impact (positive or negative) of the individual variables on the dependent variable (stress). The analysis in this model is best represented by: *stress = constant + academic integration + social Integration + financial profile - faculty access - support network + error*. (The positive factors contributing to stress, the negative factors aiding in reducing stress.) Although academic and social integration appear as contributors, this may be a result of the Yerkes-Dodson Law: variables positively impact the dependent variable to a certain point, then negatively effect it, or it may be a result of the new entrance requirements. The student's negative perception of their financial situation ($M=6.53$) is reflected in the positive effect of financial profile on stress ($r=.205$, $p=.0110$). The more negative the perception, the more impact on stress.

In analyzing the individual indices, faculty access had the strongest impact on stress ($r=-.318$, $p=.0002$). As the perception of faculty access goes up, stress decreases. The support network also has a negative effect on stress: as support increases, stress decreases.

The statistics generated by this regression were not as strong as expected. First year was systematically different from the other years, therefore a further analysis was performed, omitting the first year group to test for relationships in the second, third and fourth years (Table #26).

Table 26:
Stress Index vs. Five Independents (First Year Omitted)

count	93				
number missing	9				
R	.602				
R Squared	.362				
Adjusted R Squared	.326				
RMS Residual	5.444				

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	5	1463.941	292.788	9.881	<.0001
residual	87	2578.016	29.632		
total	92	4041.957			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	15.866	5.681	15.866	2.793	.0064
support in.	-2.648	.829	-.294	-3.194	.0020
faculty index	-.514	.120	-.396	-4.270	<.0001
social int. in.	.540	.156	.364	3.455	.0009
academic in.	.333	.208	.164	1.603	.1126
financial in.	1.268	.713	.156	1.779	.0788

The relationship between stress and the indices is much stronger with the first year group omitted ($r=.602$, $p<.0001$). This is probably evidence that the change in entrance requirements has systematically changed the nature of the population. The students admitted under the former entrance requirements are experiencing stress differently from the first years. However, faculty access continues to have the most positive effect on stress: as access increases, stress decreases ($r=-.396$, $p<.0001$). The support network has this same relationship, as support increases, stress decreases ($r=-.294$, $p=.0020$). Surprisingly, social integration has a stronger relationship with stress for this group ($r=.364$, $p=.0009$). Academic integration and financial profile have limited affiliation.

Although stress has closer associations with this group, the Assimilation—Stress—Integration Model (Chapter 2, p. 57), whereby lower

levels of stress are associated with higher levels of academic and social integration, is not supported. However, within the model, faculty access and support network are seen as precursors to academic and social integration, therefore the relationship of integration to stress cannot be overlooked.

In addition to this regression, another one was performed with program year as the dependent variable, examining the relationship of the six indices on attrition (Table #27). The regression equation depicted in this model is represented as: *year = constant + stress + social integration - academic integration + faculty access + financial profile + support network + error.*

Table #27:
Year vs. 6 Independents

count	147
number missing	15
R	.503
R Squared	.253
Adjusted R Squared	.220
RMS Residual	1.077

	DF	Sum of Squares	Mean Square	F-Value	P-Value
regression	6	54.873	9.145	7.882	<.0001
residual	140	162.433	1.160		
total	146	217.306			

Variable	Coefficient	Std. Error	Std. Coeff.	t- Value	P-Value
intercept	2.558	.948	2.558	2.698	.0078
stress ind	.063	.015	.331	4.193	<.0001
social ind	.011	.027	.036	.403	.6874
academic ind	-.141	.031	-.405	-4.580	<.0001
faculty ind	.023	.023	.073	1.023	.3082
financial ind	-.062	.105	.085	-.589	.5571
support ind	.298	.124	.183	2.408	.0173

This regression indicated a notable relationship between year (attrition)

and the indices ($r=.503$, $p<.0001$). Academic integration has the most impact on program year, ($r=-.405$, $p<.0001$), albeit in a negative direction. The expectation was that the more integrated the student, the higher the program year. Once again this may be a result of the Yerkes-Dodson Law, or the modified entrance requirements. As expected, stress has a positive effect on program year ($r=.331$, $p=.0001$). Support network is seen to nominally impact program year ($r=.183$, $p=.0173$), while social integration, financial profile and faculty access have no bearing.

Summary

Single variable research appears to have a limited effect on attrition. Certain descriptive characteristics of this interior design cohort hold with the literature, which purports that the best indicators of persistence are aspects of the students' academic profile. Grade 12 graduating average, considered to be the best predictor appears strong with 65% of the fourth year group having averages over 81% compared with only 32% of the first year group. Likewise, the fourth year group had 49% who achieved over a 3.1 in first semester, first year. Persistence is directly related to study habits, which is also apparent with 48% of the group working more than 35 hours per week on assignments.

First year residency is also thought to impact persistence, with student residence being the best predictor of persistence. Since 51% of the population is from the city the university is in, it is not surprising that 44% lived at home during first year. The next largest group dominating all years is students' residence.

When the variables were grouped into indices, noteworthy relationships were found. The comparative analysis revealed the most diversity in the second year group and the most homogeneity in the first year class. A study of the indices found the most homogeneity in first year, followed by fourth year then third. The most heterogeneous group was second year. (The present pre-enrollment requirement of 30 credit hours is possibly serving as a screening mechanism favouring a more homogenous grouping at admittance.)

A pattern of high positive responses in first year followed by low or negative responses by second year then increasing to high positive again by fourth year was characteristic in several areas: academic, social and psychological integration. A high degree of academic integration was evidenced in all four years.

The strongest correlations were in the areas of academic integration, social integration, goal commitment, faculty access and stress. Contingencies revealed significant relationships: year of program with home locale (.0014); year of program and G.P.A. (.0032); and employment and all-nighters (.006).

Analysis of Variance tested for particular associations involving stress. These occurred when tested with gender, all-nighters and working in studio. Further Anovas were performed on the indices to determine where differences were in terms of program years. Significant differences were evidenced in the analysis of academic integration, social integration and stress. First year evidenced the most disparity from the other three years in all three of these indices. This difference is likely due to the change in program entrance requirements.

Although polynomial regressions did not indicate strong relationships, social integration, academic integration and faculty access had the most impact on stress. As the multiplicity of the independent variables grew in the multiple regression analysis more interesting results developed. When stress as the dependant variable was regressed with all 5 independent indices an r of .379 was achieved with a probability of .0005. Faculty access had the strongest negative relation to stress, financial profile the strongest positive relation. When the first year group was removed from the analysis, more significant results occurred ($r=.602$, $p<.0001$), providing support for the revised entrance requirements. Faculty access continued to have the strongest relationship with stress, followed by support network and social integration.

A significant result ($r=.503$) was found when program year as the dependant variable was regressed against all six indices. Academic integration and stress had the strongest relationship with program year, followed by support network. (Program year is used throughout this study as the main indicator of attrition.) The significance of academic integration is consistent with the previous research, however, this should have been a positive relationship, not a negative one. Stress and the support network had more bearing on attrition than expected.

CHAPTER 5: CONCLUSION

Results

The findings outlined in the previous chapter reveal a traditional university cohort. The Interior Design department at this university primarily comprises 21 to 25 year old women from higher income families. They have high grade 12 averages, are second generation students, work over 35 hours per week on schoolwork, are partially employed, lived at home the first year of school and put in at least one "all-nighter" per semester. They appear to be well integrated academically, less so socially. Their parents provide emotional and financial support. They are strongly committed to their goals and to this university in particular.

Unlike large university classes where there is little familiarity with the faculty, this school enjoys a low faculty-student ratio allowing for personal relationships to develop which are positively influencing the students.

Increased levels of stress are felt by the students through their workload: time allowed for tasks, balance of leisure and school, insufficient rest and the excessive amount of work. This is evidenced in 85% of students who performed at least one "all-nighter" in the last semester of the 1992-93 school term. Students perceive above average levels of stress throughout, with the most stress felt by the third year group, the least by the second year group. This is possibly attributable to the 50% drop in enrollment from first year to second year—those who can handle the stress develop coping mechanisms which advance them to the next year, those who cannot drop-out. By third year as the workload increases in quantity and expected quality the stress level peaks. The

remaining fourth year students are apparently coping with the stress.

When five influential indices were regressed with stress as the dependent variable, faculty access was seen to have the most effect ($r=-.318$, $p=.0002$), followed by financial profile ($r=.205$, $p=.0110$). As faculty access increased, stress decreased. Conversely, as financial difficulties increased, stress also increased. Academic integration appeared to have no relationship with stress.

The correlation in the above regression was not as strong as expected ($r=.379$, $p=.0005$). This was thought to be due in part to the introduction of a dissimilar first year cohort. As a result of the modified entrance requirements, it appears the first year group might have been inherently different from the other three years. When the first year group was removed from the above regression analysis a stronger Pearson r was obtained ($r=.602$, $p<.0001$). The change in the correlation is probably evidence that the change in entrance requirements has systematically affected the nature of the population: students admitted under the former requirements had a distinctly different experience from the first year group. Faculty access still had the strongest relation to stress ($r=-.396$, $p<.0001$). Support network had a stronger relationship with stress than in the previous regression ($r=-.294$, $p=.0020$). As support and faculty access increased, stress decreased. In this regression social integration had a positive relationship with stress: as integration increased, so did stress ($r=.364$, $p=.0009$).

The Model with the Data

The initial findings which looked at the questions comprising the indices appear to substantiate portions of the Integration—Stress—Assimilation Model (figure 5, page 57). With the exception of the first year group, homogeneity increases as the student progresses to fourth year. Although students are positively integrated academically, this does not appear to be related to levels of stress, as evidenced in the regression analysis.

The first year group appears to be very different from the second, third and fourth year groups. It was expected that when it was omitted, academic and social integration would have more bearing on stress, supporting the model, however this was not substantiated. Social integration proved to have the strongest positive relationship to stress, increasing as stress increased. In the model, faculty access and support network are elements of the student centred variables which impact academic and social integration, therefore the relationship to stress cannot be overlooked.

In the model, stress as a positive attribute (eustress) leads to role embracement, assimilation and homogeneity as the student moves towards fourth year. If regarded negatively (distress), the students distance themselves from the role of interior designer and move towards dropping out through dissimulation. All students perceived a high degree of stress associated with this program; however, the analysis could not determine if this was eustress or distress. An unexpected pattern emerged of high homogeneity in first year, high heterogeneity in second year, and increasing homogeneity towards fourth year. This was repeated in several areas: academic integration, support

network, social integration and stress.

The Literature, Model and the Findings

The literature suggests that within the institutional and student centred factors, the academic subset has the most bearing on persistence. Within this, G.P.A., I.Q., academic involvement, first semester—first year marks and study habits are the strongest predictors of attrition. Second to this are variables within the environmental subset: financial assistance, value placed on education and employment, socializing and the support network. Two psychological factors are also seen to affect attrition: motivation and stress. The most prominent reason for leaving an institution is related to motivation through goal commitment and fit. If the goal is only achievable through the degree there is a better chance that the students will persist. The above mentioned single variables impact the integration of the student within the university. Tinto's 1975 theory contends that the better integrated student will persist, while the less integrated ones will drop-out.

The Integration—Stress Model (figure 5, p. 57) was developed from the literature study. Although institutional and student centred factors constitute the single variables which impact attrition, student centred factors dominate the rationales behind dropping out (see figure 1, p. 15). The literature suggests that the academic subset has the most bearing on attrition; however, it is the combination of academic with demographic, environmental and psychological factors which will press the student to their decision.

Tinto contends that it is the interaction of these factors which leads to

academic and social integration (Tinto,1975). Successful integration strongly affects attrition, high integration results in high persistence. A lack of integration into a very structured program due to negative stress (distress) results in role distancing and ultimately in dropping out. Stress tends to be induced by workload and poor person-environment congruence. As students become more integrated their stress levels decrease. Conversely the more stress the less integration. A positive stress level will actually lead to role embracement, assimilation, homogeneity and graduation.

The findings of this study partially support the literature and the model. The academic subset was seen to have the most impact on attrition, with G.P.A. out of grade 12 being the best indicator of persistence (from a statistical viewpoint). First semester, first year marks and hours spent in study were also significant factors in the process. Although these are single variable items, they are critical to the students' level of academic integration. However, the study found that academic integration had no relationship to stress and further had a strong negative relationship to program year. (The expectation was that the higher the level of integration, the higher the program year.)

Faculty access proved to have the strongest relationship with stress when all four years were included in the regression. This increased when first year was omitted. (As access increased, stress decreased.) This was in contrast to the literature which suggested that faculty access was not a critical component of the drop-out process, except where faculty assumed a parental role model.

The financial profile when regressed with stress was seen to have a low

correlation (Table 25), however when regressed with stress in Table 26 (omitting first year) there was a stronger relationship: as financial difficulties increased, stress increased.

Value placed on education and employment (an inverse relationship) revealed some interesting results. The literature suggests that if one values education then one will not place as much emphasis on employment. There appears to be a significant value placed on education by the students, yet paradoxically we see a large number of students working while going to school (44%). However, most of these are in first year which may hold with the literature contending that students working many hours will leave their programs. There is a 50% drop in employment and enrollment from first to second year.

The literature suggests that socialization is often at the root of the attrition problem; however, this tends to be alleviated through integration. Most students reported that it was easy to develop new friendships with other university students and that these friendships were satisfying. The research found that as the level of social integration increased for the second, third and fourth year students, so did their stress ($r=.364$, $p=.0009$). Next to faculty access this was found to have the strongest relationship with stress. When the first year group was included, social integration had little correlation to stress.

Also perceived as an element of the attrition problem is the support network, which is critical to reduced stress levels and increased retention. Although the support network was positively perceived overall, the level of peer and parental support increased as the student neared graduation. When

regressed with stress for all four years it was seen to have a minimal effect. However, when the first year group was omitted from the analysis, support had a stronger negative relationship ($r=-.294$, $p=.0020$) (the more support, the less stress).

The two psychological factors, stress and motivation were seen to have a clear impact on this study group. According to the literature, motivation is often regarded as the most prominent reason given for leaving a school. Comprising motivation are goal and institutional commitment. Variables determining goal commitment had the highest correlations: Obtaining a Bachelor of Interior Design degree was a very strong goal for all students. This is inherently linked to this university, as it has the only degree of its kind in Canada, creating strong institutional commitment. (If the goal is tied to the degree the student will persist.)

Stress was considered to be above average levels for all four years, with third year experiencing the most, second year the least. The literature suggests that this is induced by workload and poor person-environment congruence (integration). As previously evidenced, the students are positively integrated socially and academically. The stress which is being perceived may be attributable to workload. The majority of students (76%) put in more than 25 hours of study, while 48% work more than 35 hours after classes on assignments. In addition 85% have experienced at least one "all-nighter" in the last semester of the 1992-93 school term. Consequently the management of the workload will determine who is successful in this program and who isn't. (Stress had the strongest positive correlation with program year, $r=.331$, $p=.0001$.)

Assimilation leading to class homogeneity may be a desired inverse consequence of stress.

Anticipated Findings

The high levels of stress as a result of workload experienced by the students were anticipated. The school has for the last 53 years had a reputation for heavy workloads coupled with tight time frames. Alumni from as early as the 1950's have reminisced about "all-nighters". This has been repeated by students from the 1960's, and 70's. It was personally experienced in the 1980's by the researcher.

The number of stop-outs (25%) was also not surprising. As a stop-out myself, I was fully aware that a large number of students would take a year or semester off to work, travel or relax. The strain of the workload is often too overbearing for a student to advance uninterrupted in four years.

Another anticipated finding was the high level of goal and institutional commitment. The reputation of the school as one of the best in North America tends to breed a departmental elitism which is further reinforced by the difficulty of the program. Once admitted, students experience a strong camaraderie within their program year. Dogged determinism leads many to persevere to graduation. For many it is a "suffering through" rather than an "enjoyment of" the four year program.

Unexpected Findings

While the cohort fit a traditional student pattern from a descriptive viewpoint, there were some unexpected findings when studied through comparative analysis, the most striking being a continuous pattern of high positive responses from the first years, low and mostly negative responses from the second year group, followed by a return to positive responses in third year and high positive responses in fourth year. In addition, the pattern of homogeneity/heterogeneity was not anticipated. Second year was the most heterogenous followed by third year. First year was the most homogenous, followed by fourth year. This pattern was evidenced in questions involving academic integration, social integration, support network and stress.

A possible explanation for this is that the students from all four years are not identical in educational history. The first year group already had one year of university prior to being admitted to the faculty. Any heterogeneity which may have been displayed by this group in their first year of university may have largely disappeared.

The selection process itself may serve to screen select students who already fit a more structured profile. Conversely, they may experience more goal and institutional commitment than the other students as a result of more stringent admission requirements. If the first year were removed from the cohort we would see the predicted pattern of increasing homogeneity as the student progresses towards fourth year. Further to this, responses analyzed through Scheffé tests revealed that the first year group varied the most from all other program years on questions involving academic integration, social integration

and stress.

Another unexpected finding was the attitude of students to faculty. Unlike all of the other classes, first year had not developed a relationship with the faculty. However, this changed abruptly in second year. The reason for this is possibly the unfamiliarity of students with faculty in first year. Classes are smaller in interior design than previously experienced in arts or science, and students have the opportunity to know their professors on a first name basis. Another reason is possibly that the first years are unacquainted with the "crit" system. Often the first years do not know what a critic is for, nor how they can be helpful. By second year a clearer understanding of the role of the critic emerges. With this comes a comfortable familiarity with the faculty.

Further to this, the positive effect of faculty on stress was unexpected. Rather than increasing stress, faculty are seen as alleviating it. While administering the questionnaire there appeared to be some apprehension amongst the faculty: The questionnaire was even termed "prof-bashing" by one professor. It is interesting to note that any fears of the faculty were unfounded and unsubstantiated.

The degree of institutional and goal commitment was not expected to be as high as it was throughout all four years. The questions on goal commitment received the strongest correlations of all the data [social integration index with "It is important for me to obtain a Bachelor's degree." ($r=.406$, $p<.0001$); academic integration index with "It is important for me to obtain a Bachelor's degree." ($r=.376$, $p<.0001$); academic integration index with "The faculty assessment of my academic performance this year is consistent with my ability".

($r=.361$, $p<.0001$)).

Parental affluence was a surprise (if one accepts the concept of universal access to education). Possibly linked to this were the large number of parents with post-secondary schooling. The literature suggests that second generation university students have the best possibility of persistence. In this cohort 59% of mothers and 69% of fathers had post-secondary schooling.

Retention Strategies

Not only is the act of dropping out destructive for the student, it negatively affects the university in terms of efficacy, vacant positions, lost revenue, time and energy expenditures (Summerskill, 1962). However, the wholesale elimination of attrition is not only impossible but also impractical.

Due to the uncontrollable nature of student factors, the institution is only at liberty to effectively alter institutional factors which impact attrition. Although these are not directly attributable to attrition, they are instrumental in determining the workload. The reduction of the workload or increase in the time scheduled for completion are both within the jurisdiction of this institution through curriculum and instruction reform. Pivotal to retention are the students' first experiences with the university systems. The newly implemented entrance requirements have already evidenced positive changes to the student population.

The feeling of "fitting in" is important to retention: lack of fit may result in cognitive dissonance. As evidenced, "fitting in", may be increased through an emphasis on faculty contacts, the utility of one's education, assimilation, and

socializing with campus members.

University courses themselves should be periodically assessed to determine whether or not they are contributing to attrition (Gekoski & Schwartz, 1961). If there is an imbalance between students needs and goals and the institution's resources and demands, students will move from marginalization to dropping out. Carlson & Wagner and Rogers (cited in Pantages & Creedon, 1978) stress the responsibility of the university in keeping the student within a program: "any failure of a student . . . should be seen for what it is—a failure for which both the staff and students are responsible" (p.192).

A strong support network of family and friends is integral to the students' success within this interior design program. It is important to the student that their family and friends have a clear understanding of what the program entails and that they support and encourage them as the year progresses.

Recommendations

Considering the perceived amount of stress associated with workload it would be recommended that the curriculum be reviewed and the program reorganized to accommodate a more balanced schedule. The introduction of the first year general program out of faculty prior to admission appears to have positively changed the perception of stress within the program. As this year is a screening device at all universities, whereby 50% drop-out, this procedure should alleviate the problem within program. Admission to the Interior Design Department is then based on the G.P.A. obtained in first year university which

has historically been the best predictor of persistence.

However, this revision does not address the internal workload issue. At present there is consideration being given to reorganizing the program from the present four year structure to a three year undergraduate program followed by a two year Masters degree. This would be more in keeping with the Faculty which offers a Bachelor of Environmental Design as the undergraduate degree followed by two year Masters programs in Architecture, Landscape Architecture, and City Planning.

There presently appears to be a problem of content to be learned and time available to learn it in. If the curriculum were to be revised to suit a three year/two year format, the stress attributed to workload might be diminished.

Future Research / Limitations

A cross-sectional study of this nature provides a "snapshot" of the population as of March 24th 1993. In order to be truly generalizable to this specific university, it would be necessary to repeat this study over a number of years. A four year longitudinal study would trace individual students and assist in establishing trends in attrition at this University. As the entire population is included in the study it is only generalizable to that population as it existed in the 1992/93 year. The extension of findings to other Interior Design programs in Canada is not advisable, as there is no similar program within the country in terms of program length or admissions selection procedures. Further to this, questioning of the faculty on their perceptions of stress and attrition could be advantageous. Sociological or anthropological studies on this topic could also

be of interest to the researcher.

One limitation of the study was the introduction by the institution of a different selection process for the first year students. Rather than a "pure group" admitted under the same criteria, we essentially were comparing "one orange and three apples". Because the first year group was inherently different, it made any extrapolations difficult. However when it was ignored we did see a trend towards homogeneity by the fourth year and a stronger relationship with stress. An additional study in three years when all students are similar could be beneficial.

Summary

Although university enrollment has steadily increased (three percent annually) in Canada throughout the eighties, attrition represents a severe loss which is not addressed statistically (Davidson, 1991). While the loss for institutions is often financial, the non-pecuniary costs on the student have far greater overall effects (Johnes, 1990; Baldwin, personal communication, 1992). Attrition tends to indicate the efficacy of education. Since 50% of non-persisters believe that institutions could have done something to prevent their situation, certain policies could be instituted as standard procedures to aid in student retention: re-examine curriculum regularly, select and match students more effectively, focus on first year students, promote faculty contacts, hire effective teaching personnel, advertise counselling, develop orientation programs, strive for curriculum continuity, and establish exit interviews (Gekoski & Schwartz, 1961).

The difficulty within any study on attrition is the veracity and significance of the information given by the students. Since "dropping out" has historically maintained a negative connotation, researchers are often given rationalizations by the students rather than truthful answers. In addition these are usually autopsy studies and are not action based. It is likely that due to the multi-causal nature of the phenomenon a myriad of factors play into the final decision. The predominance of research has looked at variables as independent rather than correlational. However, the most significant research (Tinto,1975 and Spady,1970) grouped a number of variables together as integrative and correlational. Academic and Social Integration are seen to be at the root of the attrition problem. However, this study did not support those findings.

The socialization, reorientation and integration of Interior Design students begins early in the program. Many students actively embrace the assimilation, while others will distance themselves through continued relationships with non-university friends. The Student Architectural Society at this particular school provides many occasions for the novice student to socially participate in faculty functions, increasing involvement and ultimately institutional commitment. This social integration with peers creates a bond which ties the students to each other and to the interior design community at large. Students achieve academic integration through a difficult marking system which rewards only the most creative, unique and novel solutions. Displayed projects increase peer awareness of excellence and further reward the successful student.

However, there may be no motivation within this program for drop-out

prevention; it may in fact be calculated as a means of screening inappropriate students. Dropping out may be a component within the para-curriculum for a desired assimilated grouping (see figure 5, p. 57). Homogeneity may be the consequence of attrition.

If one surveys the attitudes, opinions, and values of students in one of our liberal arts colleges . . . he will find that the students exhibit much in common. Furthermore, it appears that after students have been in college for a time their similarity one to another increases. This similarity is due partly to the fact that students whose outlook is quite different from that of the majority tend to drop out of college in the first two years; but there is ample evidence that those who remain grow more alike in attitude and value pattern, at least during the first three years of college. (Sanford, 1968, p. 132)

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APPENDIX A
CONSENT LETTER

CONSENT LETTER

Dear Student,

As one of your alumni, I am requesting your participation in a study of the circumstances of students who choose to enroll in Interior Design programs. I will be administering a questionnaire within a few days which should take you 10 to 15 minutes to complete. Participation is voluntary: you do not have to complete the questionnaire if you do not want to.

If you do, your anonymity will be ensured through the absence of any form of identification. All information will be completely confidential and will be grouped for analysis, further guaranteeing individual anonymity. The researcher has also guaranteed the University of _____ that no references will be made to the institution in any subsequent reports. A summary of the data will be made available to the Department of Interior Design.

If you are willing to participate, please complete the questionnaire. If not please return it to the researcher. Thank you for your assistance. Your help in this research will be greatly appreciated.

Sincerely,

Delcy A. Walker

Faculty of Graduate Studies,

The University of Calgary,

Calgary, Alberta

APPENDIX B
QUESTIONNAIRE

CONSENT ACKNOWLEDGEMENT

BY FILLING IN THIS QUESTIONNAIRE I agree to participate in this study. I understand that my only involvement will be completing this questionnaire. All responses are confidential and will be destroyed at the end of the project. To further ensure this, my name or identification number will not appear anywhere on the forms. The information I give will be grouped for analysis, guaranteeing my personal anonymity. I understand that the researcher is the only person who will have access to my form.

PART 1. SOME BACKGROUND INFORMATION ABOUT YOU

Circle the number beside your response

- | | |
|--|---|
| 1. Year of program? | 1. one 2. two 3. three 4. four |
| 2. Gender? | 1. male 2. female |
| 3. Age range? | 1. 17-20 2. 21-25 3. 26-30 4. 31-35
5. 36+ |
| 4. Where is your home locale? | 1. Winnipeg 2. other urban Cdn. centre
3. rural Canada 4. other country |
| 5. Combined annual income of your parents? | 1. under \$25,000 2. \$25,000-\$35,000
3. \$35,000-\$45,000 4. \$45,000-\$55,000
5. \$55,000+ |
| 6. Marital status. | 1. single 2. married 3. divorced
4. separated 5. other |
| 7. What is the highest level of post secondary schooling that your mother has (college, technical school, University)? | 1. none 2. diploma 3. bach. degree
4. master's 5 Ph.D |
| 8. What is the highest level of post secondary schooling that your father has (college, technical school, University)? | 1. none 2. diploma 3. bach. degree
4. master's 5 Ph.D |
| 9. Who was most influential in your decision to attend this University? | 1. parents 2. friends 3. teacher
4. significant other 5. other |

10. Have you "stopped out" and returned? 1. yes 2. no

PART 2. YOUR ACADEMIC PROFILE

Circle the number beside your response

- | | | | |
|---|--------------------------|--------------------------|------------|
| 1. What was your combined average (G.P.A.) out of grade twelve? | 1. 65-70%
4. 81-85% | 2. 71-75%
5. 86%+ | 3. 76-80% |
| 2. After classes, how many hours of studying or schoolwork do you do on assignments per week? | 1. 10-15
4. 36-45 | 2. 16-25
5. 46+ | 3. 26-35 |
| 3. What was your G.P.A. at the end of the first semester in first year? | 1. 1.5-2.0
4. 3.1-3.5 | 2. 2.0-2.5
5. 3.6-4.0 | 3. 2.6-3.0 |
| 4. What do you expect your G.P.A to be at the end of this term? | 1. 1.5-2.0
4. 3.1-3.5 | 2. 2.0-2.5
5. 3.6-4.0 | 3. 2.6-3.0 |

PART 3. THE ENVIRONMENT YOU FIND YOURSELF IN

Circle the number beside your response

- | | |
|--|--------------|
| 1. Do you work in the Studio? | 1. yes 2. no |
| 2. Do your parents endorse your attendance at this University? | 1. yes 2. no |
| 3. Does your family know the difference between interior decorating and design? | 1. yes 2. no |
| 4. Do your friends support and encourage you while you attend this University? | 1. yes 2. no |
| 5. Do your friends know the full extent of what an Interior Designer does on a project? | 1. yes 2. no |
| 6. This Interior Design Department adheres to a pass / fail ratio for projects and grades. | 1. yes 2. no |

7. Did your parents expect that you would go to University? 1. yes 2. no

8. It is likely that I will register at this University next fall. (not applicable to 4th year students) 1. yes 2. no

PART 4. YOUR FINANCIAL SITUATION

Circle the number beside your response

1. Are you completely financing this year yourself? 1. yes 2. no

2. Are your parents financially supporting you? 1. yes 2. no

3. Do you have a student loan, scholarship or grant? 1. yes 2. no

4. Do you think your being at University is negatively affecting the finances of your parents ? 1. yes 2. no

PART 5. MORE ABOUT YOURSELF

Circle the number beside your response

1. Was it your decision to go to University? 1. yes 2. no

2. Do you have children? 1. yes 2. no

3. Do you still perceive Interior Design in the same way as you did when you entered? 1. yes 2. no

4. How many hours per week are you employed? 1. none 2. 1-5 3. 6-10
4. 10-15 5. 16 +

5. What was your initial reason for choosing this program?

1. I knew a Designer.
2. I was good at drawing.
3. I always wanted to be a Designer.
4. "Designers made a lot of money".
5. People told me I had "a flair".

6. In my first year as a student I lived:
1. in a residence 2. with my family 3. off campus by myself 4. off campus with friends 5. other
7. How many "all-nighters" did you have in the last semester?
1. one 2. two 3. three 4. four+ 5. none
8. How many school days did you miss due to illness last semester?
1. one 2. two 3. three 4. four + 5. none

PART 6. YOUR CAMPUS EXPERIENCE

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

- | | SD-----SA |
|--|------------------------|
| 1. I am satisfied with the extent of my intellectual development since enrolling at this University. | 1 2 3 4 |
| 2. My academic experience has had a positive influence on my intellectual growth and interest in ideas. | 1 2 3 4 |
| 3. I am satisfied with my academic experience at this University. | 1 2 3 4 |
| 4. Few of my courses this year have been intellectually stimulating. | 1 2 3 4 |
| 5. My interest in ideas and intellectual matters has increased since coming to this University. | 1 2 3 4 |
| 6. I am more likely to attend a cultural event (i.e. a concert, the ballet, a lecture, or art show) now than I was before coming to this University. | 1 2 3 4 |
| 7. I have received the marks that I anticipated I would. | 1 2 3 4 |

PART 7. YOUR RELATIONSHIP WITH THE FACULTY

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

- | | SD-----SA |
|--|------------------------|
| 1. My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes. | 1 2 3 4 |
| 2. My nonclassroom interactions with faculty have had a positive influence on my intellectual development and interest in Interior Design. | 1 2 3 4 |
| 3. My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations. | 1 2 3 4 |
| 4. Since coming to this University, I have developed a close, "mentor" like relationship with at least one faculty member. | 1 2 3 4 |
| 5. I am satisfied with the number of opportunities to meet and interact with faculty members. | 1 2 3 4 |
-

PART 8. YOUR SOCIAL LIFE ON CAMPUS

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

- | | SD-----SA |
|---|------------------------|
| 1. The student friendships I have developed at this University have been personally satisfying. | 1 2 3 4 |
| 2. My interpersonal relationships with other students have had a positive influence on my personal growth, values, and attitudes. | 1 2 3 4 |
| 3. It has been difficult for me to meet people . | 1 2 3 4 |

- | | | | | |
|---|---|---|---|---|
| 4. It has been difficult for me to make new friends with other students. | 1 | 2 | 3 | 4 |
| 5. Few of the students would be willing to listen to me and help me if I had a personal problem. | 1 | 2 | 3 | 4 |
| 6. My interpersonal relationships with other students have had a positive influence on my intellectual development and interest in Interior Design. | 1 | 2 | 3 | 4 |
| 7. Most students at this University have values and attitudes different from mine. | 1 | 2 | 3 | 4 |
| 8. Most of my friends do not attend University. | 1 | 2 | 3 | 4 |

PART 9. HOW DO YOU SEE YOURSELF

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

- | | SD-----SA |
|--|------------------------|
| 1. It is important for me to obtain a bachelor's degree. | 1 2 3 4 |
| 2. I am confident that I made the right decision in choosing to attend this University. | 1 2 3 4 |
| 3. I am here for the practical knowledge which this program gives me; graduating is unimportant. | 1 2 3 4 |
| 4. Getting good grades is not important to me. | 1 2 3 4 |

PART 10. HOW DO YOU VIEW YOUR SITUATION

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

	SD-----SA			
1. I am satisfied with my marks.	1	2	3	4
2. The faculty assessment of my academic performance this year is consistent with my ability.	1	2	3	4
3. The workload makes me feel pressured.	1	2	3	4
4. There is adequate time to complete the work satisfactorily.	1	2	3	4
5. It is difficult to achieve a balance between school work and leisure activities.	1	2	3	4
6. I am able to get sufficient rest.	1	2	3	4
7. I often leave class feeling angry.	1	2	3	4
8. I am frequently anxious about my school work.	1	2	3	4
9. As the year progresses, I feel less energy and enthusiasm for what I am doing.	1	2	3	4
10. The amount of work required is excessive.	1	2	3	4
11. The amount of work assigned is too difficult.	1	2	3	4
12. All of the work I am assigned is critical to my professional growth.	1	2	3	4

PART 11. ABOUT THE PROGRAM

For the following questions, circle the response which best describes your opinion. **SD (strongly disagree)** **SA (strongly agree)**

	SD-----SA			
1. The Interior Design program at this University is one of the best in North America.	1	2	3	4
2. The "case based" teaching method, where students are given a problem to solve, is the most effective way to teach Interior Design.	1	2	3	4
3. The practice of "crits within the studio" lacks cohesion.	1	2	3	4
4. I view "crits" as being essential to my understanding of the assignments.	1	2	3	4
5. The courses are well structured to help me learn from the start of the year to the end.	1	2	3	4
6. Financial assistance from The University is readily available in terms of loans , grants and scholarships.	1	2	3	4

APPENDIX C
ETHICS APPROVAL



THE
UNIVERSITY
OF CALGARY

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EDUCATION JOINT RESEARCH ETHICS COMMITTEE

CERTIFICATION OF INSTITUTIONAL
ETHICS REVIEW

This is to certify that the Education Joint Research Ethics Committee at The University of Calgary has examined and approved the research proposal by:

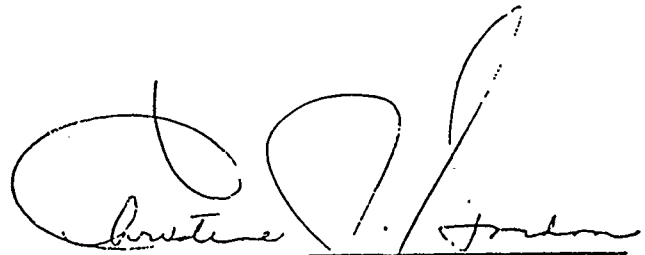
Applicant: DELCY A. WALKER

of the Department of: CURRICULUM AND INSTRUCTION

entitled: HOMOGENEITY AS A CONSEQUENCE OF ATTRITION
IN INTERIOR DESIGN

(the above information to be completed by the applicant)

March 1, 1993
Date


Chair, Education Joint Research
Ethics Committee