INVESTIGATING COLLEGE STUDENT ATTRITION: A REPORT OF AN INTERNSHIP AT THE COLLEGE OF THE NORTH ATLANTIC WITH AN ANALYSIS OF FIRST-SEMESTER STUDENT ATTRITION

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by

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Abstract

This report consists of two chapters. The first chapter outlines the details of a graduate student internship at the College of the North Atlantic during the fall 1999 semester. The second chapter provides a description of a research project that was developed and carried out by the intern.

During the internship, the intern worked in the student services offices at the Engineering Technology Centre and the Prince Philip Drive campuses of the College of the North Atlantic. The intern's duties and activities were wide-ranging and included various general duties along with involvement in the College of the North Atlantic Career and Employment Services and the College Student Success Program.

The research project was designed to investigate various aspects of attrition of first-semester students enroled in Engineering Technology programs at the College. The research design incorporated both qualitative and quantitative research methods including focus groups, interviews, and the collection, and statistical analysis of quantitative data. Results of this study showed that 24.9% of first-semester Engineering Technology students withdrew prior to the winter 2000 semester, and that student academic difficulties play a significant role in student decisions to withdraw or persist at the College. These results are consistent with the Student Integration Model of student attrition advanced by Tinto (1975, 1987, 1993). This model proposes that a better "fit" between student and institution results in greater academic and social integration and subsequently increases the likelihood that students will persist.

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Rationale for the Internship

In order to fulfill the requirements for the Master of Education (Postsecondary Studies) programme at Memorial University of Newfoundland, graduate students must complete either a thesis, an internship, a project, or a paper folio. This intern chose to pursue the internship route in fulfilling this requirement as he was interested in gaining further insight into the professional work of post-secondary education administrators. Additionally, the intern was interested in participating in a practical work experience that would involve participation in the administration and implementation of student services. The intern perceived that this experience would enhance his previous experience in this area attained through his past work with a provincial post-secondary student advocacy organization. The intern's academic goals include the successful completion of the Master of Education (Postsecondary Studies) at Memorial University of Newfoundland and the eventual completion of a Doctor of Education in the area of Higher Education.

In addition to a ten-week work placement, the chosen internship route requires graduate students to complete a research project. The intern's research interests include youth transition into the labour market. One aspect of this area of research that particularly interests the intern is student attrition and retention at post-secondary institutions. Officials within the Division of Student Services at the College of the North Atlantic were similarly interested in this area of research. As a result of this shared interest, the intern decided to pursue a research project in the area of student attrition and

retention at the College of the North Atlantic.

The Internship Setting

The College of the North Atlantic is Newfoundland and Labrador's only publicly funded college. Each year, more than 10,000 full-time and part-time students are enrolled at the various campuses of the college in programs ranging from one year to four years in duration. The College offers programs and courses in the areas of Adult Basic Education and Literacy, Applied Arts, Business, Community Education, Computer Science, Engineering Technology, Medical Sciences, Natural Resources, and Trades.

For the duration of the internship, the intern was affiliated with the Division of Student Services at the Engineering Technology Centre and Prince Philip Drive campuses of the College in St. John's. The Division of Student Services provides assistance in a number of areas including admissions, counselling and testing services, financial aid services, health services, library and audiovisual services, registrar's office, and sports and recreation.

Rationale for the Internship Setting

The intern gained familiarity with the Division of Student Services at the College of the North Atlantic while working for a nonprofit student advocacy organization from 1996 to 1999. The intern was particularly interested in the administration and implementation of student support services in non-university settings. In addition, the

intern was interested in gaining familiarity with various aspects of college programs that provide training in the technical and applied sciences. For this reason the intern chose the College of the North Atlantic as the site for the internship.

Supervision

The intern's placement at the College of the North Atlantic was supervised by both a university supervisor and a field supervisor. The intern's university supervisor was Dr. Dennis Sharpe, Faculty of Education. Mr. John Harnett, who is a counsellor at the Engineering Technology Centre campus of the college, fulfilled the role of Field Supervisor.

The intern met periodically with Dr. Sharpe prior to, during, and following the internship placement. These consultations took place as necessary in order to discuss: (a) the progress of the intern's work placement; and (b) emerging issues related to the development, organization, execution, and reporting of research carried out by the intern. Similarly, during the internship placement the intern met on a weekly basis with Mr. Harnett to discuss issues arising from the work placement and the progress of the intern's research.

Internship Goals and Objectives

The intern's expectations for this placement were essentially twofold. First, over the course of the 10-week placement at the College of the North Atlantic, the intern

wished to gain practical work experience associated with the delivery and administration of campus student services. Secondly, the intern sought to gain necessary research skills through the design and completion of the research project outlined in this report. Prior to the commencement of the internship, the intern outlined the following list of specific goals and objectives:

Goal One: To gain practical experience in the student services profession.

Objectives:

a) Enhance skills and competencies in carrying out day to day responsibilities of student services personnel.

b) Consult with instructors, administrators, and other student services personnel.

c) Observe the daily work and routines of College personnel.

Goal Two: To become familiar with the programs and services offered at the College of the North Atlantic.

Objectives:

a) Research and review appropriate college documents.

b) Discuss the College programs and services with College personnel.

Goal Three: To become familiar with the mandate and organization of student services at the College of the North Atlantic.

Objectives:

a) Research and review the appropriate college documents.

b) Review the organizational structure of the Division of Student Services with College personnel.

c) Observe the work of the personnel of the Division of Student Services.

Goal Four: To design and complete a research project in the area of student attrition and retention.

Objectives:

a) Delineate the specific research area of interest.

b) Select the appropriate instruments and strategies for data collection.

c) Use the appropriate techniques for interpretation of the data and report the research findings.

d) Make recommendations based on the research.

Summary of Internship Activities

Baird (1999) provided the following pointed characterization of internship placements: "The role of intern occupies a gray area somewhere between student and professional" (p. 18). Although interns have much experience and knowledge to gain,

they "may also be counted on to possess certain knowledge and skills. This ambiguity is compounded because others at the internship (site), including staff and clients, may also be unclear about what interns are and what the purpose of the internship is," (Baird, 1999, p.19). Baird's description of internships highlights the reality that internship roles are often less than obvious to both the interns themselves and to those working with them. This role ambiguity was similarly experienced by the intern during his placement at the College of the North Atlantic. Mostly, the intern perceived his role to be more consistent with that of participant-observer than college employee.

During the internship placement the intern worked in the student services offices at the Engineering Technology Center campus and the Prince Philip Drive campus. In addition, the intern spent several days at the student services offices at the Seal Cove and Topsail Road campuses of the College. The intern's activities and duties during the ten-week placement were wide-ranging. The intern's general duties involved providing students with information on issues related to admissions and registration, general student affairs and student financial aid. The depth and breadth of this information required the intern to first familiarize himself with the college's many rules, regulations, and guidelines. The intern also participated in activities and carried out tasks associated with the College of the North Atlantic Career and Employment Services, and the College Student Success Program. The intern's specific activities are outlined in greater detail below.

General Duties

The majority of the intern's activities were associated with acting as a resource person similar to the role of the College Student Affairs and Employment Officers (SAEO's). When situations arose where the intern was unable to provide students with specific information, the intern referred students to the appropriate resource person or college department.

The intern assisted students who were seeking specific information about the admissions and registration procedures at the College of the North Atlantic. This involved informing students of important College policies and deadlines. For example, the intern provided students with information about how to add and drop courses or make other changes to their registration status. Students who were interested in enrolling at the College for the first time were provided with program information and information about the application procedures associated with specific programs. The College of the North Atlantic offers free tutoring service whereby senior students are paid to tutor students experiencing academic difficultly. The intern often advised students interested in participating in the tutoring program of the policies relating to tutoring services at the College. From time to time the intern referred students seeking to avail of professional counselling services to a College counsellor. The intern also provided assistance and guidance to students who were experiencing problems with government-sponsored student loan programs. For example, the intern sometimes contacted the Student Aid Division of the provincial government's Department of Education or the student's

personal banking institution in order to help resolve issues regarding the disbursement of student loans. In addition, the intern assisted students in obtaining information about internal and external scholarships and other student assistance programs.

Career and Employment Services

In addition to providing general information to students about employment opportunities, the intern acted as a resource person at the Career and Employment Services Centre at the Prince Philip Drive campus. The College career and employment services provide necessary labour market information and skill development activities to assist students in their search for employment. The intern regularly posted job opportunities on the campus 'job board,' provided students with resume writing assistance, and assisted job-seekers in conducting internet job searches. The intern also utilized the internet to research various components of student career development and job search strategies. After compiling this information, the intern produced a Job Search Information Kit for use as a resource for college students seeking employment. The Job Search Information Kit developed by the intern is attached in Appendix A of this report.

Student Success Program

The intern assisted in various aspects of the College-wide Student Success Program. The primary purpose of this program is to aid students in their transition from high school to college and assist them in achieving their academic and career goals. The

intern attended meetings with student advisors at the Engineering Technology Centre and participated in a number of group discussions regarding the challenges and difficulties experienced by college students. The intern also assisted student services staff in the administration of two student assessment tools, the ACCUPLACER and the Freshman Integration and Tracking System.

The ACCUPLACER is a four-component system designed to provide placement, advisement, and guidance information for students entering two to four year post-secondary institutions. This computerized test assesses student proficiencies in reading comprehension, sentence skills, and arithmetic and algebra. After completing the ACCUPLACER test a student score report card is generated for use by counselling staff.

The Freshman Integration and Tracking System utilizes a wide-range of student information collected via two questionnaires in order to identify students who may benefit from career guidance and/or additional academic support. The first questionnaire, the Partners in Education Inventory, collects information about students' demographic characteristics, academic background, support service needs, attitudes, and educational goals. The Partners in Education Inventory is used to produce a computer-generated Partners in Education Report that is delivered to each student. This report matches college support services to student needs as identified by the Partners in Education Inventory and also helps to identify students with a high probability of failure or departure in their first semester. The Student Experience Inventory, the second

questionnaire in the Freshman Integration and Tracking System, collects information about individual student support needs, academic and extracurricular behaviors, and perceptions and attitudes subsequent to their enrollment. Like the Partners in Education Inventory, the Student Experience Inventory is used to produce a computer-generated Partners in Education Report that is delivered to each student. In addition to aiding in the identification of students who are at risk of failure or early departure, the results of the Student Experience Inventory provide information about any changes in individual student attitude about college education since registering at the College of the North Atlantic.

Review of the Internship Objectives

Goal One:

To gain practical experience in the student services profession.

This was accomplished by carrying out various general duties in the student services offices at the Engineering Technology Centre campus and the Prince Philip Drive campus. These general duties involved providing information to and consulting with students on numerous issues related to admissions and registration, general student affairs and financial aid. The intern also had the opportunity to participate in the development and delivery of the College Career and Employment Services and in the implementation of the College Student Success Program. The intern also participated in

numerous discussions with college administrators, instructors, and student services personnel regarding the delivery and development of the College student services.

Goal Two:

To become familiar with the programs and services offered at the College of the North Atlantic.

The intern accomplished this goal by reviewing the College policies and services, the college calendar, and the College student handbook. Over the course of the internship placement the intern worked at the Engineering Technology Centre, Prince Philip Drive, Seal Cove, and Topsail Road campuses. Through discussions with College personnel at these campuses, the intern became familiar with the various facilities and academic programs at the College of the North Atlantic.

Goal Three:

To become familiar with the mandate and organization of student services at the College of the North Atlantic.

This was accomplished by assisting the College's student services staff in carrying out various functions of the student services division. Also, the intern gained additional insight through viewing the appropriate College documents, discussing student services with numerous College administrators, instructors, and student services personnel, and by observing the daily work routines of student services staff.

Goal Four:

To design and complete a research project in the area of student attrition and retention.

With the assistance of a faculty supervisor and a field supervisor, the intern developed a research project designed to investigate first-semester student attrition from three-year engineering technology programs at the Engineering Technology Centre campus of the College of the North Atlantic. The intern reviewed the available literature on student attrition, developed a research methodology, carried out the research, and analyzed and reported the results. The research project is discussed in detail in Chapter 2 of this report.

Conclusion

An overall description of the intern's activities and experiences during an internship at the College of the North Atlantic has been provided in this section of the internship report. During the internship placement, the intern gained valuable experience in the field of educational administration and the administration of student services. The intern achieved the desired goals. The sometimes ambiguous nature of internship roles as described by Baird (1999) proved to be challenging. Despite this challenge, the intern's opportunity to apply knowledge acquired through academic course work in a professional setting significantly contributed to the intern's personal and professional

development. The intern's academic experience was advanced considerably through the experience of designing and carrying out the research project that will be discussed in Chapter 2 of this report.

Chapter 2: The Research

Introduction to the Research

Student attrition from post-secondary education programs has been identified by educators and post-secondary policy-makers as a problem that is worth investigating and addressing. When individuals enrol at post-secondary institutions and subsequently invest valuable time and financial resources, their primary goal is to complete a program of study and graduate. When students drop out of programs, both the student and the institution are deprived of the goal underlying their respective investments. Research conducted at Canadian post-secondary institutions has indicated that the rate of student attrition in Canada was in the order of 30% to 50% (Deitsche, 1989; Stoll & Scarff, 1983). A recent study conducted by the College of the North Atlantic (1999) found that an average of 45% of students who initially enrolled in three-year programs fail to graduate.

Student attrition is understood to be a complex interplay between many different variables. For the most part, research into this area has sought to do two things. First, researchers have endeavoured to further explain why the attrition problem exists to the degree that it does (Bean, 1983; Cabrera, Nora, and Castaneda, 1993; Tinto, 1993). Second, in order to reach a resolution, researchers have been devising and experimenting with various approaches within institutions that are aimed at reducing student attrition rates (Seidman, 1996; Tinto, 1997).

The purpose of this study was to conduct an investigation into the causes of student attrition in the first semester of three-year engineering technology programs at the College of the North Atlantic.

Statement of Purpose

It has been suggested that student attrition from public college programs in Newfoundland and Labrador is higher than desired (Byrne, 1991). The public college, the College of the North Atlantic, derives the majority of its operational funding through a public subsidy granted by the Government of Newfoundland and Labrador. As a result, there is a public interest in addressing the perceived problem of student attrition from programs at the College of the North Atlantic.

The purpose of this study was to investigate variables contributing to student attrition in the first semester of engineering technology programs offered at the College of the North Atlantic. For this study, attrition was defined as a student's failure to resume his or her program of study in the second semester of the program in which he or she had initially enrolled.

It was anticipated that this study would provide useful information that could subsequently be generalized for the purposes of explaining and addressing the high percentages of attrition from three-year engineering technology programs at the College of the North Atlantic.

Review of the Student Attrition and Retention Literature

Considerable attention and significant research resources have been directed toward the problem of student attrition from post-secondary education programs. There is an interest in lowering rates of student attrition, considering the loss of financial resources incurred by both student and institution and the other negative effects that arise when drop-outs occur (Deitsche, 1990; Gilbert & Gomme, 1986). During the present era, when the importance of completing a post-secondary education is increasing, the result of a negative experience with post-secondary studies may have profound implications on student attitudes toward future post-secondary study. Research has shown that somewhere in the order of 30% to 50% of students who enrol in post-secondary programs fail to graduate (College of the North Atlantic, 1999; Deitsche, 1989; Smith, 1991). Research studies have shown that a significant proportion of student attrition occurs in the first year of a post-secondary program followed, in descending order, by attrition of students enrolled in subsequent program years (Bryant, 1999; Ellis, 1991; Johnson & Buck, 1995). Analogous to other studies of Canadian post-secondary institutions, Deitsche (1989) found that 30% of students enrolled at Humber College withdrew in the first year of study. A study administered by the College of the North Atlantic (1999) reported an average attrition rate of 45% among those students who had enrolled in the three-year programs at the College.

Canadian educators are often critical of the fact that the majority of post-

secondary student attrition research has been carried out in the United States. Many of these American studies have been limited to the experience of traditional students at four year baccalaureate colleges (Deitsche, 1990; Sharpe & Spain, 1993); however, an increasing volume of student attrition research is becoming available from research studies conducted within Canada's colleges and universities.

Theoretical Models

There are two dominant conceptual models of student attrition that have been put forward to provide a theoretical framework. These are Tinto's (1975, 1987, 1993) Student Integration Model and Bean's (1980, 1982a, 1983) Student Attrition Model. Tinto's Student Integration Model, validated by research that has shown it to be accurate for different institutions with differing student populations (Pascarella & Chapman, 1983), attributes attrition to a lack of congruency between students and institutions. Commitment to personal educational goals and to a specific institution are shaped by a sufficient match between student motivation and academic ability and the academic and social characteristics of the educational institution. This model advances the idea that a higher degree of academic and social integration in the post-secondary setting leads to a lesser likelihood of withdrawal. Essentially, this model suggests that a better 'fit' between student and institution will enhance their academic and social integration and subsequently result in a higher likelihood of retention.

The Student Attrition Model proposed by Bean (1980, 1982a, 1983) suggests that student attrition is analogous to the personnel turnover experienced by other organizations. This model focuses considerable attention on the influences of student beliefs and attitudes and the subsequent influences of these attitudes on their decision to persist or terminate enrollment. According to this conceptual framework, student beliefs are moulded by the various academic and social aspects of their institution, in addition to various external factors such as the influence of students' significant others.

Recognizing a considerable degree of overlap between the Student Integration Model and the Student Attrition Model, Cabrera, Nora, and Castaneda (1993) simultaneously tested "all non-overlapping propositions underlying both conceptual frameworks" (p. 124). Upon achieving results consistent with the central propositions of each model, the researchers concluded that a combination of the two theories would provide "a more comprehensive understanding of the complex interplay among individual, environmental, and institutional factors" (p. 135).

Johnson (1994) completed an attrition study at the University of Alberta and proposed a "Canadian model" of undergraduate student attrition. This model distinguishes between two types of withdrawal: voluntary withdrawal and institutional withdrawal. According to Johnson, institutional withdrawal occurs when an institution requires students to withdraw their enrollment as a consequence of not maintaining the required academic standard or less commonly, as a result of academic or other

misconduct. Voluntary withdrawal, on the other hand, is defined by Johnson as a more complex activity resulting from factors related to student academic performance and psychological state. Johnson proposed that personal withdrawal decisions are based on individual student's personal assessment of their academic performance combined with other psychological factors such as satisfaction, goal and institutional commitment, and social integration.

Variables Influencing Attrition and Retention

Post-secondary student attrition research has generally sought to reveal the influence of certain variables on the attrition and retention of students in post-secondary programs. Pre-enrollment variables (those that characterize student background prior to enrollment) include age, gender, socioeconomic status, prior academic performance and behavior, and commitment to completing post-secondary studies. Other variables of interest, termed post-enrollment variables, are, in essence, those which are a product of student experiences in the post-secondary environment following enrollment. Post-enrollment variables include social integration and academic integration (these include peer interaction experiences and experiences with faculty and program material respectively), enrollment status, financial concerns, and employment status (Sharpe & Spain, 1993). There has been debate as to which category of variables contributes more to drop-out decisions, pre-enrollment or post-enrollment; however, there is a recognition

that attrition results from an interaction of both types of variables (Sharpe & Spain, 1993).

Numerous studies of student attrition have examined the extent to which financial considerations influence students' decisions to persist. Sharpe and Spain (1993) point out in their review of the literature that "financial problems have consistently ranked in the top three reasons for leaving post-secondary programs" (p. 33). Heller (1997) found that community college students were more likely than university students to withdraw from a program entirely when tuition is increased. Results of a study by St. John and Starkey (1995) suggest that regardless of institution or income, some students will terminate their enrollment in response to higher tuition. Byrne (1991) reported that a majority of students who had been enrolled in two and three year college programs maintained that they withdrew because of financial problems. A number of other studies in the literature have shown that increases in tuition have a consistently negative effect on student persistence in post-secondary studies (Leslie & Brinkman, 1987; St. John & Starkey, 1994; St. John, Oescher, & Andrieu, 1992; St. John, Andrieu, Oescher, & Starkey, 1994). St. John, Kirshstein and Noell (1991) found student financial aid to be positively associated with student persistence and that student loans promoted persistence. In contrast, a study conducted by Johnson (1994) found no significance difference in the reported financial situation of students withdrawing and those continuing. Johnson's results are complemented by other studies which have not found

financial considerations to be a significant contributor to student attrition (Cabrera et al., 1993; Sharpe & Spain, 1993).

The influence of students' gender and age have not been shown to be significant in the majority of the research into variables affecting student attrition, although Byrne (1991) found, in her study of college students, that two-thirds of the drop-outs were male. Byrne also found that a higher percentage of male students were academically dismissed than females and that a greater number of females than males withdrew voluntarily. With respect to the influence of students' age on attrition, in contrast to the majority of research studies on student persistence and withdrawal, Murtaugh, Burns and Schuster (1999) found that the likelihood of persistence was lower for the older students in their study.

Student pre-enrollment academic performance (e.g. high school grades) has consistently been convincing as an indicator of whether or not they will persist in a post-secondary program. Numerous studies have shown that higher levels of academic achievement in high school positively correlate with student persistence in post-secondary studies (Byrne, 1991; De Rome & Lewin, 1984; Deitsche, 1990; Johnson, 1994; Murtaugh et al., 1999; Sharpe & Spain, 1993). Deitsche (1990) found that in addition to having lower levels of previous education prior to college enrollment, dropouts came from a general level high school program as opposed to an advanced high school program. This result was similarly obtained by Sharpe and Spain (1993).

Student academic and social integration at post-secondary institutions have proved to be adequate predictors of persistence in many studies. Researchers have often used student cumulative grade point average as a measure of academic integration. Student study habits during their program of study and student-faculty interaction also have been used as indicators of academic integration. Higher levels of academic integration have been seen in those students who persist (Cabrera et al., 1993; Deitsche, 1990; Johnson, 1994; Pascarella & Chapman, 1983; Romano, 1995; Tinto, 1993). Tinto (1997) found that grade point average, perceptions of faculty, and hours of study per week were significant predictors of student persistence. A number of research studies have documented a significantly influential role played by student-faculty interactions outside of the classroom in increasing student academic integration and persistence. This research indicates that frequent, meaningful contact with faculty members, especially contact focusing on academic or career-related issues, appears to heighten students' involvement and motivation (Astin, 1984, 1993; Pascarella, 1980, 1985; Terenzini and Pascarella, 1977, 1980; Terenzini, Pascarella, & Lorang, 1982; Tinto, 1987, 1993, 1997). Some studies have shown that when students are actively involved in on-campus activities and, as a result, experience a heightened sense of community within their institution, they are more likely to persist (Astin, 1993; Naretto, 1995; Tinto, 1993).

Students' occupational status and enrollment status have also been shown to be significant factors in student attrition studies. The results of a study conducted by Fralick (1993) showed that 82% of non-returning students had worked while attending college.

Thirty-six percent of these students had worked more than 40 hours per week. Research evidence has also shown that full-time students are more likely to persist than part-time students. Lam (1984) reported an attrition rate that was 80% higher for part-time students as opposed to full-time students at one institution. Similarly, Windham (1994) found that part-time students and those who worked full-time during their study period were less likely to continue their studies.

Students' goal commitment, that is, their commitment to completing a post-secondary education and meeting their educational goals, has consistently been shown to impact their decisions to persist (Deitsche, 1990; Sarkar, 1993). A study of student attrition conducted by Bryant (1999) at Memorial University of Newfoundland found that "one of the major reasons given by students for not returning to Memorial was the fact that they were unsure of their educational goals" (p. vii). In general, students who express a higher commitment to the completion of their post-secondary studies, and who put a higher value on it, are more likely to persist.

The influence of significant others on student educational and goal commitments is also well documented in the post-secondary student attrition literature (Bean, 1980, 1982a, 1982b, 1983; Cabrera, Stampden, & Hansen, 1990; Cabrera et al., 1993; Nora, Hinasi, & Matonak, 1993). The encouragement and emotional support of others has been shown to have positive direct and indirect effects on student decisions to persist.

Addressing Attrition

The growing body of research into the problem of student attrition has led to a substantial number of recommendations for practices devised to help lower student attrition rates. Tinto (1997) has called for modifications to the instructional process that would see classrooms function as communities, with greater emphasis on faculty-student interaction and academic and social integration. Some researchers have recommended that background information be collected on enrolling students for the purposes of identifying 'at risk' students who might benefit from additional academic or other additional support (Deitsche, 1990; Gilbert, Chapman, Deitsche, Grayson, & Gardner, 1997; Noel, Levitz, & Kaufmann, 1982). Ellis (1991) stated that "student retention research indicates that by far the biggest concentration of students leaving school is during and right after the first quarter or semester. This is the most effective time in the student's career to provide additional support" (p. 7). Following this logic, institutions have implemented numerous measures in attempts to reduce student attrition. By providing students with access to various additional support programs institutions hope to provide students with a greater opportunity to experience higher degrees of academic and social integration. Student support programs include orientation, professional counselling services, student development programs, and improved accessibility to academic tutoring and remedial help (Byrne, 1991; Gilbert et al., 1997; Osborne, 1992; Seidman, 1996).

Summary

Student attrition from post-secondary programs is a result of the complex interplay of a number of variables. These variables are traditionally grouped into two categories: pre-enrollment variables and post-enrollment variables. No single combination of these variables has shown to account for the variance experienced in research into student attrition. In addition, a review of the research literature relating to post-secondary student attrition suggests that much of the research findings are contradictory. As a result, the specific causes of the attrition phenomenon are variable and still remain largely unclear. Despite this, the conceptual models of Tinto (1975, 1987, 1993) and Bean (1980, 1982a, 1983) and other educational researchers have proven to be a valuable resource and guide in investigating post-secondary student attrition.

Research Questions

The primary research objective of this study was to provide insight into the phenomena of first-semester attrition from the Engineering Technology programs at the College of the North Atlantic. The following research questions were developed in accordance with this objective:

1. From the point-of-view of first-semester college students, what factors influence student decisions to withdraw from college?

2. From the point-of-view of college faculty members, what factors influence student decisions to withdraw from college?

3. What do students who withdraw from college after their first semester of study report as the major influence contributing to their decision to withdraw?

4. What proportion of students who withdraw from college after their first semester intend to pursue further post-secondary study in the future?

5. Compared to persisting students, do students who withdraw early have different background characteristics (gender, age, highest level of prior education, parents' highest level of education, cumulative average of all high school courses attempted, grade in math course taken in grade 12, type of math program taken in grade 12, or marital status)?

6. Compared to persisting students, do students who withdraw early have different entry-level characteristics (enrollment status, student loan status, employment insurance status, confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, institutional commitment)?

7. Compared to persisting students, do students who withdraw early have different mid-semester characteristics (confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, institutional commitment, perception of program, intent to leave, peer integration, faculty integration)?

Methodology

This research study incorporated both quantitative and qualitative research methods. Social science researchers often use a combination of research methodologies in order to strengthen the validity of research outcomes and enhance the interpretation of study results. This usage of multiple data collection techniques is commonly referred to as triangulation (Glesne & Peshkin, 1992; Merriam, 1998; Stake, 1995). Qualitative research methods were incorporated into this study in an attempt to attain a more complete understanding of student attrition and to provide a extended characterization of student attrition at the College of the North Atlantic. The qualitative component of the research project consisted of focus groups and interviews. The collection, and subsequent analysis, of data acquired from the two questionnaires which comprise the Freshman Integration and Tracking System as well as data from the College of the North Atlantic's student records database constituted the quantitative component of the project. The Freshman Integration and Tracking System and its associated questionnaires were administered by the College as part of a relatively new approach to improving student retention.

It was anticipated that the use of both quantitative and qualitative research methods would fulfill the primary research goal of providing insight into the phenomena of first-semester attrition at the College of the North Atlantic.

Focus Groups

Morgan (1997) suggested that focus groups are essentially group interviews that rely on the interactions that take place within the group in response to topics provided by a researcher. He contends that "the hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group" (Morgan, 1997, p. 2). The intern decided to use focus groups with the anticipation that focus group interactions would provide information about student attrition that would not be acquired through quantitative data analysis or from the analysis of interview responses.

Two focus groups were organized in order to investigate the attitudes and perceptions of both faculty and students pertaining to the phenomenon of attrition in the first semester of programs at the College. One consisted of 17 students while the other was comprised of five faculty members. The student focus group was made up of full-time first-semester students who were enrolled in an entry level communications course. This communications course is part of the required curriculum in the first semester of all of the College's engineering technology programs. The faculty focus group was made of instructors of first-year courses who had been assigned by the College administration to act as academic advisors to first-year students.

In the process of organizing the student focus group the intern received permission from a College communications course instructor to conduct the focus group

with a class of first-year students provided that the students agreed to participate. None of the students in the class were opposed to participating in the focus group and the session subsequently took place during a regularly scheduled class.

The intern requested that the College's first-year student academic advisors participate in the faculty focus group. Five of these faculty members agreed to participate and later comprised the faculty focus group.

The line of questioning for the focus groups followed a semi-structured format similar to that described by Merriam (1998). This interview format was chosen in order to allow the intern enough latitude to pose questions that could arise from the focus group sessions themselves. The explanatory project statement read to all focus group participants, along with a sample of questions, can be found in Appendix F. Both of the focus group sessions were 50 minutes in duration.

Since it was unwieldy to make handwritten or typed notes of all participant comments, the focus group sessions were recorded on audiotape. Focus group participants were assured that their identities would remain confidential. The participants were informed that the recordings of the focus group sessions would be destroyed six months following the completion of this research project.

The intern analyzed the discussions that were recorded on audiotape and extracted the significant themes discussed by the focus group participants. The feedback provided by participants was coded and examined in order to provide a representation of

the perspectives of first-semester students and their instructors regarding first-semester student attrition at the College. Significant themes were supported by participant responses.

Interviews

Social sciences researchers recommend interviewing as a useful technique when one is seeking to uncover opinions, perceptions, and attitudes. Interviewing provides an opportunity to learn about what one cannot see and to explore alternative explanations of what is seen (Glesne & Peshkin, 1992; Marshall & Rossman, 1995). According to Seidman (1998), interviews in research studies provide a means of "understanding the experience of other people and the meaning they make of that experience. Interviewing allows us to put behavior in context and provides access to understanding their action" (pp. 3-4).

The intern attempted to contact all 84 individuals in the attrition group by telephone for a brief interview. This number of early leavers represented 24.9% of the 337 students who were originally registered in engineering technology programs at the College of the North Atlantic for the fall 1999 semester.

Following the release of the fall 1999 semester grades, the names and telephone numbers of all former students in the attrition group were extracted from the College student record database (see letter of permission in Appendix B). The intern telephoned

each of these former students at least once. Those not available to speak with the intern during the time of the first telephone contact were telephoned a second time. If the second interview attempt was unsuccessful, the individuals concerned were eliminated from the interview list. In addition, a number of individuals were eliminated from the interview list because they could no longer be reached at the contact number held in the College database. The number of former students successfully contacted was 51. All former students successfully contacted were informed that their participation in a telephone interview was entirely voluntary and that the identities of all those interviewed would be kept confidential. The number of individuals who agreed to be interviewed was 44 (52.4% of the attrition group).

The interviews concentrated on student rationale for deciding to discontinue their studies. They followed a structured format analogous to that described by Merriam (1998). In keeping with this format, interview questions were prepared in advance of the interviews. This interview method was chosen in order for the intern to gain insight into students' primary reason for deciding to discontinue their program of study and to find out if the students who withdrew planned to resume post-secondary studies in the future. An explanatory project statement that was read to all respondents along with the interview questions can be found in Appendix G. Responses to interview questions were manually recorded.

Responses to the interview questions were analyzed and compiled. The

individual responses of interviewees were grouped together to show provide a representative summary of the major influences that contributed to students' decisions to withdrawal from the College. In addition, a summary of withdrawing students' intentions for future post-secondary study was compiled.

Quantitative Data

As stated earlier, for the quantitative component of this research study the intern utilized the Freshman Integration and Tracking System which was developed at the Humber College of Applied Arts and Technology. The data collected by the two questionnaires that comprise the Freshman Integration and Tracking System, additional information accessed from the College of the North Atlantic's records of students' admission, and information regarding the students' subsequent academic profile were compiled for use in this component of the study. Quantitative data analysis procedures were used in an attempt distinguish differences between early leavers and persisters based on a number of predetermined background, entry-level, and mid-term characteristics.

The College administration granted permission for the intern to access and use the information compiled for this component of the research study (see Appendix B). The intern strictly adhered to principles of confidentiality in the use of student records and ensured that the anonymity of all students was preserved.

All students entering the first semester of Engineering Technology programs offered at the Engineering Technology Centre of the College of the North Atlantic in the fall of 1999 were participants in this component of the research study. The total number of new entrants was 337.

On August 26, 1999, a day prior to the commencement of first semester's classes, College student services officials requested that all first-semester students complete the first questionnaire in the Freshman Integration and Tracking System entitled the Partners in Education Inventory. The number of students who completed the Partners in Education Inventory was 292 (86.6% of total). The Partners in Education Inventory collects information about student demographic characteristics, academic background, support service needs, attitudes, and educational goals. The Partners in Education Inventory can be used to produce a computer-generated Partners in Education Report that is delivered to each student. This report matches College support services to the needs of each student as identified by the Partners in Education Inventory and also helps to identify students with a high probability of failure or departure in their first semester.

At mid-semester, between October 22 and 29, 1999, participating students were asked by student services officials to complete the Student Experience Inventory, the second questionnaire in the Freshman Integration and Tracking System. The number of students who completed the Student Experience Inventory was 141 (41.8% of total). The Student Experience Inventory collects information about students' support needs,

academic and extracurricular behavior, perceptions, and attitudes subsequent to their enrollment. Like the Partners in Education Inventory, the Student Experience Inventory can be used to produce a computer-generated Partners in Education Report that is delivered to each student. Also, like the Partners in Education Inventory, the Student Experience Inventory aids in identifying students who are at risk of failure or early departure.

During the fall semester and at the beginning of the winter 2000 semester a variety of information was extracted from the College's student records database. This information included details of students' age, gender, high school marks and a number of other demographic and academic characteristics that will be listed below. For the purposes of analysis, two groups of students were differentiated: the early leavers group and the persisters group. Those students not continuing their program into the second semester constituted the early leavers group.

The dependent variable for the analysis of this data was categorized as early leaver or persister. Early leavers were those students who did not re-register at the College of the North Atlantic for a second semester in January 2000. Persisters were defined as those who did re-register for a second semester.

Three categories of independent variables were operationalized for analysis purposes. These categories were background characteristics, entry-level characteristics, and mid-term characteristics. Some of the independent variables were assigned

operational values based on a dummy coding scheme. Responses to selected questionnaire items from the Partners in Education Inventory and the Student Experience Inventory based on response values from 1 to 5 based on a Likert-type scale. Items on the Partners in Education Inventory and the Student Experience Inventory required respondents to indicate they 1) strongly agreed, 2) agreed, 3) were neutral, 4) disagreed, or 5) strongly disagreed. For some of the questionnaire items the response values were later reversed in order to produce a unidirectional scale. Students' response values for questionnaire items measuring the same construct (e.g. educational commitment) were averaged in order to provide a single, composite numerical value for each particular independent variable. A list of the questionnaire items from the Partners in Education Inventory and the Student Experience Inventory that were utilized for this study can be found in Appendix C and Appendix D respectively. In addition, a list of the numbers for questionnaire items from both the Partners in Education Inventory and the Student Experience Inventory that correspond to each of independent variables can be found in Appendix E.

The background characteristics examined were gender, age, student's highest level of prior education, mother's highest level of education, father's highest level of education, cumulative average of all high school courses attempted, final grade in grade 12 mathematics, type of mathematics program taken in grade 12, and marital status.

The entry-level characteristics were enrollment status, student aid status,

employment insurance status, and seven attitudinal constructs assessed from responses to questionnaire items on the Partners in Education Inventory. These constructs were confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, and institutional commitment.

The mid-term characteristics consisted of the following 10 attitudinal and behavioral constructs assessed from responses to questionnaire items on the Student Experience Inventory. These were confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, institutional commitment, perception of program, intent to leave, peer interaction, and faculty interaction.

All data were analyzed using the Statistical Package for Social Sciences (SPSS) version 9.0 for Windows. Analysis was completed for each of the independent variables.

Results

Focus Groups

This section of the research report provides a description of the comments and discussions which took place during the student and faculty focus groups. The comments of focus group participants are provided verbatim.

Student Group.

When asked about potential reasons for first-semester student attrition from the Engineering Technology programs at the College of the North Atlantic, participants in the student focus group gave a number of potential reasons. The majority of these in some way related to academic difficulties experienced by students.

The students felt that one reason for first-semester student attrition was the highly demanding workload and high degree of difficulty associated with the math and science courses in the program. They suggested that new entrants have much difficulty adjusting to working under a higher degree of pressure than they had experienced previously in high school. This is evidenced by the following comments offered by two of the students in the group:

> "From day one you are just bombarded with material...and a lot of people just get overwhelmed by it. We thought this was going to be just a regular, basic course. Some of them just end up leaving because they can't keep up with the pace of the courses, they neglect some courses, and fall too far behind."

> "I had no trouble in high school. I didn't have to study. All I had to do was show up and listen. If I tried to do that here I wouldn't be here for very long. It's a lot different. And people can't just adjust to pressure automatically. Adjustment to pressure comes with experience."

The participants in this focus group agreed that many of the students who leave due to academic difficulties do so partly as a result of the fact that they were unsure of the academic demands of the Engineering Technology programs at the College. The following statement by one student represents the group's perspective on this:

> "All we really went by was what was in the calendar. That book only had about two paragraphs in it about the program and the prerequisites. It's all pretty vague. You really don't know enough about what's expected of you before you jump right into it."

The student group also suggested that students who have been out of high school for a number of years experience the greatest degree of academic difficulty and are least likely to persist. The following statements by two of the participants represent the views of the group on this:

> "People who have been out of school for a while walk in here and are expected to know the same stuff that the crowd who just walked out of high school have fresh in their minds. They've got it a lot harder...a lot more work. If you can't keep up you're gone."

> "I did well in math in high school but that was four years ago. Now I'm sitting down at a desk and I'm expected to know all of that off the top of my head. I can understand why some people drop-out."

It was also suggested that students who have poor attendance, those who do not study enough after classes, and those who work part-time are less likely to persist because of the academic problems this behavior causes. Some of the comments included:

> "You've got to be at your classes and put your hours in in the evenings and on the weekend. It's impossible to catch up if you fall behind."

> "If you are working a job part-time that's time away from studying and your marks are going to go down. You really need about three hours in the evening and about 12 on the weekend to study. If you've got a job there's not much time for that."

The students felt that having positive relationships with faculty members and their fellow students was important for persistence in their program of study. The group perceived that positive relationships with faculty and their peers helped them academically. The statements below were made by three of the students with respect to faculty and peer relationships:

> "It helps if your instructors are more approachable and more tolerant of people who can't understand the material. Sometimes you need help after class time and if your instructors are not approachable then you might not want to ask for help. If they're like that you'll probably just do it yourself and that's a lot harder."

> "You've got to have friends here. I mean who wants to be alone in a crowd of people. You've got to have people to talk things over about school or just to vent to. If nothing else it makes it all appear a bit easier and when you go back to class you feel a bit less frustrated."

> "You need to have study groups because they make it a bit easier. You can't always get in touch with that one instructor to help you out. You've got to have a study group."

The students in the focus group pointed out that if a student has a high level of motivation and commitment to completing a diploma then they are more likely to succeed and eventually graduate. The following comment adequately represents the group's perspective on this:

> "Pretty well everyone here feels like we've got to get an education. We've really got to have a good education to have a sensible life."

When asked about what the College could do in order to reduce the current attrition rate several suggestions were made by the group. These suggestions included: providing problem labs between scheduled classes for students experiencing academic difficulty; including the option for students, particularly those who have been out of high school for a number of years, to complete "refresher courses" in areas which they are academically weak; and providing potential students with more in-depth information about the academic requirements of the College's Engineering Technology programs.

Faculty Group.

The College instructors introduced and discussed a number of potential reasons for first-semester student attrition at the College. Like the student group, the discussion of first-semester student attrition amongst the first-year student instructors in the faculty group consisted of a number of major points mainly related to academic difficulty.

The faculty members suggested that a major reason for first-semester student attrition at the College was that new entrants generally have a low level of awareness of the academic requirements of their selected program of study prior to enrollment. For this reason, many students underestimate the level of difficulty of the Engineering Technology programs. Some comments made about this by the instructors included:

> "I think our new students assumed that the programs at the College would be easier than university. They end up being shocked by how much math and science is involved."

> "College programs are thought of as practical, hands-on, or like a trade....something easier than university. That's not true and they don't realize the difference until they get here in the classroom."

It was suggested that some students experience academic difficulties as a result of the transition from high school to college. Within the Engineering Technology programs the workload is significantly higher than high school work loads and math skills are particularly important. The instructors perceive that less than average performance in high school makes the academic transition even more difficult.

> "Some students come up to me and say, 'I can't get all the work done.' Because it's so hard for them, some of those students choose to give up and just leave."

> "If they didn't do well in high school then they have to make that up here. The workload is extremely demanding...6 hours a day between 9 a.m. and 5 p.m. plus homework assignments."

The faculty suggested that, in general, students who have been out of high school for a number of years and have not been enrolled at another post-secondary institution prior to enrolling at the College face greater academic difficulty and, as a result, are more unlikely to persist in their chosen program of study. The following comment by an instructor sums up this perception:

> "The students who I think are having the most trouble, and the ones who leave, are the students who have been out of school for a couple of years who have no post-secondary experience."

The instructors felt that the culture of the College and of the College programs, which is partially a result of the high academic demands, has produced an environment which makes it difficult for some students to persist. Some comments related to this included:

> "I find that for both faculty and students the culture here is a grind. You know the pace is so fast...there's so much to be done. We need a better environment for learning."

> "The culture here is very businesslike...very industrial...even the general layout of the building. Most of the time it really doesn't feel much like a place of higher learning. It is like that...a grind."

Another factor influencing student persistence that was discussed was student motivation. Because of the academic demands placed on students, the instructors felt that those possessing a high level of motivation and commitment to succeed would be more likely to persist. The faculty members also felt that students who had a high level of uncertainty about their occupation upon graduation, in the words of one faculty member those "who don't really know what they want to do," are less likely to persist.

The faculty members also suggested that many first-semester students experience a high level of stress because of the personal and lifestyle changes they experience when making the transition from high school to college. Because a majority of the new entrants at the College reside outside of the city of St. John's the instructors felt that many of these students experience added stress which is associated with living on their

own for the first time. The following explanation offered by one instructor represents the faculty group perspective:

> "For many of our students this is their first time away from home for any length of time. They have lots of new responsibilities, they have their own apartment, they have to cook and clean, pay the bills, deal with new roommates, and so on and so on. For a lot of kids fresh out of high school that can be pretty difficult to handle...pretty stressful."

The faculty members offered a number of ideas which they thought might mitigate the present level of first-semester student attrition from the College Engineering Technology programs. They suggested that the College should make additional efforts to increase potential students' awareness of the College's program requirements and the nature of the professions associated with the Engineering Technology programs. They also recommended that the curriculum of the Engineering Technology programs be redesigned such that new entrants have an opportunity to enrol in courses of a less academic and more practical nature in their first and second semesters. Currently the courses related to the more practical aspects of the programs are introduced in the second and third years of the Engineering Technology programs. The third and final suggestion offered by the instructors was that students be given the opportunity to do a lighter course load as an alternative to terminating their enrollment.

Interviews

When asked why they had decided to withdraw from the College, interview participants gave varying responses. There were five distinctive categories of reasons that the former students gave to explain their decision to withdraw from the College of the North Atlantic. These categories were: academic, employment, institutional, personal, and financial. A majority (45%) of the 44 students who participated in interviews stated that the major reason contributing to their decision to withdraw was academic in nature. The second most frequent reason given for student withdrawal was related to employment reasons (21%).

Of those interviewed, 20 participants (45%) stated that their decision to withdraw was influenced by academic reasons, 9 participants (21%) stated that the reason for their withdrawal was related to employment, 7 (16%) were influenced by institutional factors, 5 (11%) cited personal reasons, and 3 (7%) said their reason was financial.

When asked if they intended to return to a post-secondary institution in the future, 30 (68%) of the interview participants indicated that they intended to return. Within this group, 18 (60%) stated that they intended to return to resume their post-secondary study at the College of the North Atlantic while the reminder signified that they would attend another post-secondary institution (reasons for the latter decision were not solicited).

Quantitative Data

Overall, 337 first-semester Engineering Technology students were participants in the quantitative component of this study. Data for each student were accessed through the College student records database and also collected using the Partners in Education Inventory and the Student Experience Inventory. In some cases, data for particular independent variables was unavailable for some of the study participants. The reasons for missing data can be attributed to several factors. In some cases complete sets of data for variables were not available from the College student record database. Also, of the 337 study participants, 292 completed the Partners in Education Inventory and only 141 completed the Student Experience Inventory. Additionally, some students did not complete all items on each of the inventories.

Background Characteristics.

A large majority (81%) of the first-semester students in the Engineering Technology programs at the College of the North Atlantic were male (see Table 2.1). Likewise, the majority of the withdrawing students were also male. A chi-square analysis of this variable indicated no significant difference between the early leaver and persister groups based on gender ($\chi^2(1, 337) = 0.899$, $p > .05$).

Table 2.1

Gender and age of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

		Registration Status					
		Return		Withdraw		Total	
		Freq.	%	Freq.	%	Freq.	%
Gender							
	Male	202	79.8	71	84.5	273	81.0
	Female	51	20.2	13	15.5	64	19.0
	χ^2=.899, p=.343						
*Age	17-18	79	31.5	24	28.2	103	30.7
	19-20	88	35.1	34	40.0	122	36.3
	21-22	43	17.1	10	11.8	53	15.8
	> 22	41	16.3	17	20.0	58	17.3
	χ^2=2.768, p=.429						

*Data for one study participant were unavailable.

The ages of the study participants can also be seen in Table 2.1. Over 80% of the

first-semester Engineering Technology students were between the ages of 17 and 22 years inclusive. Those aged 19 to 20 years comprised the largest age group (36.3%). In the early leaver group most students were between the ages of 19 and 20 years. A chi-square analysis of this variable showed no significant difference between the early leaver and persister groups based on age ($\chi^2(1, 337) = 2.768$, $p > .05$).

Table 2.2 shows the highest level of prior education achieved by the study participants and by their parents. Just over 45% of the students highest level of education consisted of a high school diploma, while 18.5% had less than a high school education. Over one-third of the students had previously attended a post-secondary institution, with 5.2% receiving a diploma or degree. A chi-square analysis of this variable indicated no significant difference between the early leaver and persister groups based on their highest level of prior education ($\chi^2(3, 336) = 2.037$, $p > .05$).

A high school diploma was not obtained by 19.5% of the mothers of study participants and 28.6% of their fathers. However, the majority of the students' parents had been enrolled in post-secondary studies. Just over fifty-percent of students' mothers and 54.1% of their fathers had some post-secondary education or had received a degree of diploma. The results of a chi-square analysis indicated no significant difference between the early leaver and persister groups with respect to their mothers' highest level of education ($\chi^2(3, 287) = 0.337$, $p > .05$). Similarly, the difference between the early leaver and persister groups with respect to their fathers' highest level of education was not significant

($\chi^2(3, 283) = 1.340$, $p > .05$).

Table 2.2

Students' highest level of education prior to registering at the College of the North Atlantic during the fall 1999 semester and the highest level of education of their parents.

	Registration Status					
	Return		Withdraw		Total	
	Freq.	%	Freq.	%	Freq.	%
*Students' Highest Level of Prior Education						
Less than High School Diploma	36	16.7	17	23.9	53	18.5
High School Diploma	101	46.8	29	48.8	130	45.3
Some Post-secondary	68	31.5	21	29.6	89	31.0
Post-secondary Degree/Diploma	11	5.1	4	5.6	15	5.2
χ^2=2.037, p=.565						
*Mothers' Highest Level of Education						
Less than High School Diploma	43	20.0	13	18.1	56	19.5
High School Diploma	62	28.8	22	30.6	84	29.3
Some Post-secondary	59	27.4	18	25.0	77	26.8
Post-secondary Degree/Diploma	51	23.7	19	26.3	70	24.4
χ^2=.377, p=.953						

(continued)

Table 2.2 (continued)

	Registration Status					
	Return		Withdraw		Total	
	Freq.	%	Freq.	%	Freq.	%
[b]Fathers' Highest Level of Prior Education						
Less than High School Diploma	62	29.2	19	26.8	81	28.6
High School Diploma	39	18.4	10	14.1	49	17.3
Some Post-secondary	59	27.8	24	33.8	83	29.4
Post-secondary Degree/Diploma	52	24.5	18	25.4	70	24.7
χ^2=1.340, p=.720						

[a]Data for 50 study participants were unavailable.

[b]Data for 54 study participants were unavailable.

The means of the cumulative averages of all courses attempted by students in high school are shown in Table 2.3 along with the means of Grade 12 math grades. The means of high school cumulative averages and Grade 12 math marks were higher for students in the persistence group (those who returned to the College for the winter 2000 academic term) than those who had withdrawn from the College. An analysis of variance was completed for each of these variables, the results of which are contained in Table 2.4.

The results of the analysis of variance indicated that those students in the persister group achieved significantly higher math grades in Grade 12 than those in the early leaver group. In addition, the analysis of variance showed that the cumulative averages of all high

school courses attempted were significantly higher for those students in the persister group.

Table 2.3

Average grade in grade 12 math and cumulative average of all high school courses attempted for first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Registration Status	N	Mean	SD
Grade 12 Math	Return	206	70.71	11.91
	Withdraw	66	65.68	12.03
	Total	272	69.49	12.11
All High School Courses	Return	206	72.68	7.95
	Withdraw	66	67.86	6.35
	Total	272	71.51	7.86

Note: Data for 50 study participants were unavailable.

Table 2.4

Analysis of variance for average grade in grade 12 math and cumulative average of all high school courses attempted for first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Source	df	Mean Square	F	Sig. F
High School Grades	Between Groups	1	1161.67	20.147	.000
	Within Groups	270	57.660		
Grade 12 Math	Between Groups	1	1265.5651	8.882	.003
	Within Groups	270	42.490		

Table 2.5 shows a breakdown of the type of mathematics course (basic, academic, or advanced) completed in Grade 12 by the study participants. Only a marginal percentage (1.1%) of the students had completed a math course at the basic level. The majority (72.4%) of the students had completed an academic math course, while a math course at the advanced level was completed by the remaining 26.5% of the students. A large majority (90.9%) of the students who withdrew from the College before the commencement of the winter 2000 semester had completed an academic math course in Grade 12. The results of a chi-square analysis indicated that there was a significant

difference between the withdrawal and persister groups with respect to the type of math course they completed in Grade 12 ($\chi^2(2, 272) = 15.998$, $p < .05$). This indicated that students who completed a more advanced math course were more likely to persist.

The sample of participants was sufficiently homogenous with respect to marital status that no further analysis based on this variable was warranted. Only 3% of the study participants indicated that they were married.

Table 2.5

Type of math course completed in grade 12 by first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Registration Status					
	Return		Withdraw		Total	
	Freq.	%	Freq.	%	Freq.	%
Type of Math						
Basic	2	1.0	1	1.5	3	1.1
Academic	137	66.5	60	90.9	197	72.4
Advanced	67	32.5	5	7.6	72	26.5
χ^2=15.998, p=.000						

Note: Data for 65 study participants were unavailable.

Entry-Level Characteristics.

The entry-level characteristics of study participants consisted of enrollment status, student aid status, employment insurance status and seven attitudinal constructs assessed from responses to selected questionnaire items on the Partners in Education Inventory (see Appendix C). These constructs were confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, and institutional commitment. The Partners in Education Inventory was completed by students prior to the commencement of the fall 1999 semester. Two-hundred and ninety-two of the 337 study participants completed the inventory.

A large majority (95.8%) of the first-semester Engineering Technology students in the study were registered at the College as full-time students (see Table 2.6). As a result, the majority of students who returned for the winter 2000 semester (97.2%) and the majority of those who withdrew (91.7%) were also enrolled as full-time students. The number of students in the early leaver group who were part-time students was more than three times the number of part-time students in the persister group. The results of a chi-square analysis indicated that there was a significant difference between the early leaver and persister groups with respect to their enrollment status ($\chi^2(1, 337) = 4.908$, $p < .05$). Although this result indicated that part-time students were more likely to withdraw than full-time students, the result should be interpreted with caution given the very small number of students in the part-time group.

Approximately half (49%) of the study participants were receiving government sponsored student financial assistance (see Table 2.6). The number of students in the persister group who were receiving student aid was almost equal to those who were not. In the early leavers group a small majority of the students were not receiving student aid. A chi-square analysis showed that there was no significant difference between the early leaver and persister groups with based on student aid status ($\chi^2(1, 337) = 0.621$, $p < .05$).

Table 2.6 also shows the Employment Insurance (EI) status of the study participants. Approximately one-fifth (21.1%) of the students were receiving Employment Insurance.

Table 2.6

Enrollment, student aid, and employment insurance (EI) status of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Registration Status					
	Return		Withdraw		Total	
	Freq.	%	Freq.	%	Freq.	%
Enrollment Status						
Full-time	246	97.2	77	91.7	323	95.8
Part-time	7	2.8	7	8.3	14	4.2
χ^2=4.908, p=.027						

(continued)

Table 2.6 (continued)

	Registration Status					
	Return		Withdraw		Total	
	Freq.	%	Freq.	%	Freq.	%
Student Aid Status						
Receiving Student Aid	127	50.2	38	45.2	165	49.0
Not Receiving Student Aid	126	49.8	46	54.8	172	51.0
χ^2=.621, p=.431						
Employment Insurance Status						
Receiving EI	52	20.6	19	22.6	71	21.1
Not Receiving EI	201	79.4	65	77.4	266	78.9
χ^2=.162, p=.687						

There were similar proportions of students in both the persister and early leaver groups who were receiving Employment Insurance. The results of a chi-square analysis indicated that there was no significant difference between the early leaver and persister groups with based on Employment Insurance status ($\chi^2(1, 337) = 0.162$, $p < .05$).

Table 2.7 shows the entry-level characteristics of study participants which were assessed from responses to selected questionnaire items on the Partners in Education

Inventory. As previously stated, the items on the instruments utilized for this study, the Partners in Education Inventory and the Student Experience Inventory, required respondents to indicate they either strongly disagreed, disagreed, were neutral, agreed, or strongly agreed with statements. For some of the items it was necessary to reverse the response values (1 for strongly disagree to 5 for strongly agree) in order to produce a unidirectional scale. For analysis purposes, the response values of questionnaire items measuring the same attitudinal or behavioral construct were averaged in order to provide a composite numerical value for each of the constructs. A list of the questionnaire items from the Partners in Education Inventory and the Student Experience Inventory that were utilized for this study can be found in Appendix C and Appendix D respectively. In addition, for a complete list of the questionnaire items from both the Partners in Education Inventory and the Student Experience Inventory that correspond to independent variables see Appendix E.

The construct "confidence in success" assessed the degree to which students were confident that they would successfully complete their program of study. Responses to six questionnaire items contributed to this construct. The overall Chronbach's alpha reliability coefficient of .7915 calculated for these items was considered acceptable for the purposes of this research study. The mean scores for students who later withdrew (4.3495) and for those who persisted (4.3187) indicated that, overall, students were quite confident about their prospects for competing their program.

Table 2.7

Entry-level attitudes and perceptions of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester. As collected via the Partners in Education Inventory.

	Registration Status	N	Mean	SD
[a]Confidence in Success	Return	216	4.3187	.5218
$\alpha = .7915$	Withdraw	72	4.3495	.5029
	Total	288	4.3264	.5164
[a]Occupational Uncertainty				
$\alpha = .8055$	Return	217	2.2619	.6480
	Withdraw	71	2.3099	.7195
	Total	288	2.2737	.6654
[b]Value of Education				
$\alpha = .6126$	Return	220	4.6125	.4439
	Withdraw	72	4.6806	.3590
	Total	292	4.6293	.4250
[a]Job Orientation				
$\alpha = .7287$	Return	217	1.7060	.5693
	Withdraw	71	1.7268	.5819
	Total	288	1.7111	.5715

(continued)

Table 2.7 (continued)

	Registration Status	N	Mean	SD
[b]Concern for Finances	Return	219	2.6587	.7521
$\alpha = .6480$	Withdraw	73	2.8185	.9263
	Total	292	2.6986	.8005
[c]Educational Commitment	Return	214	4.7539	.3466
$\alpha = .7427$	Withdraw	71	4.7793	.2609
	Total	285	4.7602	.3271
[d]Institutional Commitment	Return	218	4.1067	.4733
$\alpha = .8369$	Withdraw	73	4.0668	.4756
	Total	291	4.0966	.4734

[a]Data for 49 study participants were unavailable.
[b]Data for 45 study participants were unavailable.
[c]Data for 52 study participants were unavailable.
[d]Data for 46 study participants were unavailable.

The construct "occupational uncertainty" assessed the degree to which the study participants were unsure about their future employment. Responses to six questionnaire items contributed to this construct. The Chronbach's alpha reliability coefficient of .8055 calculated for these items was considered acceptable for the purposes of this

research study. The means for both the early leavers group (2.3099) and the persister group (2.2619) indicated that, overall, the students had a low degree of uncertainly about their future employment (see Table 2.7).

Students' attitudes about their value of education was evaluated by four questionnaire items corresponding to the construct "value of education". For the purposes of this research study, a Chronbach's alpha reliability coefficient of .6126 calculated for these items, although low, was considered acceptable. Similarly high means for both the attrition group (4.6806) and the persister group (4.6125) indicated that, in general, students in both groups placed a high emphasis on the value of education (see Table 2.7).

The construct "job orientation" evaluated student orientation toward working instead of completing their diploma program. Responses to five questionnaire items contributed to this construct. The Chronbach's alpha reliability coefficient of .7287 for these items was considered acceptable. The means for this construct recorded for the withdrawal group (1.7268) and the persister group (1.7060) indicated that, in general, the students preferred to maintain their program of study as opposed to leaving their program to take a job (see Table 2.7).

The level of concern that the study participants felt about their personal financial situation was evaluated by four questionnaire items corresponding to the construct "concern for finances". For the purposes of this research study, a Chronbach's alpha

reliability coefficient of .6480 calculated for these items, although low, was considered acceptable. The means for the withdrawal group (2.8185) and the persisters group (2.6587) indicated that the students were not generally concerned about their personal finances (see Table 2.7).

The degree to which students were dedicated to completing a post-secondary education was assessed by six questionnaire items corresponding to the construct "educational commitment". The overall Chronbach's alpha reliability coefficient of .7427 calculated for these items was considered acceptable for the purposes of this research study. The mean score for the withdrawal groups (4.7539) and for the persister group (4.7793) suggested that the study participants were strongly committed to completing a post-secondary education (see Table 2.7).

The construct "institutional commitment" appraised the degree of commitment that the study participants felt toward the College of the North Atlantic. Responses to eight questionnaire items were associated with this construct. For the purposes of this research study, a Chronbach's alpha reliability coefficient of .8369 calculated for these items was considered acceptable. The means for the withdrawal group (4.0668) and the persister group (4.1067) indicated that the students realized a personal commitment to the College (see Table 2.7).

Table 2.8 shows the results of analyses of variance carried out for each of the constructs assessed using the Partners in Education Inventory. For each of the constructs

there was no significant difference between the withdrawal group and the persister group.

Table 2.8

Analysis of variance for entry-level attitudes and perceptions of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Source	df	Mean Square	F	Sig. F
Confidence in Success	Between Groups	1	.005144	.192	.661
	Within Groups	286	.267		
	Total	287			
Occupational Uncertainty	Between Groups	1	.123	.277	.599
	Within Groups	286	.444		
	Total	287			
Value of Education	Between Groups	1	.251	1.393	.239
	Within Groups	290	.180		
	Total	291			
Job Orientation	Between Groups	1	.002308	.070	.791
	Within Groups	286	.328		
	Total	287			

(continued)

Table 2.8 (continued)

	Source	df	Mean Square	F	Sig. F
Concern for Finances	Between Groups	1	1.398	2.191	.140
	Within Groups	290	.638		
	Total	291			
Educational Commitment	Between Groups	1	.003453	.322	.571
	Within Groups	283	.107		
	Total	284			
Institutional Commitment	Between Groups	1	.008693	.387	.534
	Within Groups	289	.225		
	Total	290			

Mid-Term Characteristics.

The study participant mid-term characteristics consisted of 11 attitudinal and behavioral constructs assessed from responses to selected questionnaire items on the Student Experience Inventory (see Appendix D). Seven of these constructs–confidence in success, occupational uncertainty, value of education, job orientation, concern for finances, educational commitment, and institutional commitment–were assessed

previously by the Partners in Education Inventory. The additional constructs assessed by the Student Experience Inventory were perception of program, intent to leave, peer interaction, and faculty interaction. One hundred and forty-one of the 337 study participants completed the Student Experience Inventory.

At mid-term, responses to six questionnaire items contributed to "confidence in success". The overall Chronbach's alpha reliability coefficient of .8627 calculated for these items was considered acceptable for the purposes of this research study. The means for students who later withdrew (4.0657) and for those who persisted (4.1667) indicated that, overall, students were fairly confident about their prospects for competing their program (see Table 2.9).

The construct "occupational uncertainty" was assessed by responses to six questionnaire items. The Chronbach's alpha reliability coefficient of .8316 calculated for these items was considered acceptable for the purposes of this research study. The means for both the withdrawal group (2.5167) and the persister group (2.2088) indicated that, overall, the students had a mid-range level of uncertainly about their future employment (see Table 2.9).

Student attitudes about their value of education was evaluated by four questionnaire items. For the purposes of this research study, a Chronbach's alpha reliability coefficient of .6814 calculated for these items was considered acceptable. Similarly high means for both the withdrawal group (4.6625) and the persister group (4.5842) indicated that, in general, students in both groups placed a high emphasis on the

value of education (see Table 2.9).

Table 2.9

Mid-term attitudes and perceptions of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester. As collected via the Student Experience Inventory.

	Registration Status	N	Mean	SD
[a]Confidence in Success	Return	99	4.0657	.6696
$\alpha = .8627$	Withdraw	39	4.1667	.7174
	Total	138	4.0942	.6823
[b]Occupational Uncertainty	Return	99	2.2088	.7428
$\alpha = .8316$	Withdraw	40	2.5167	.7480
	Total	139	2.2974	.7547
[c]Value of Education	Return	101	4.5842	.5175
$\alpha = .6814$	Withdraw	40	4.6625	.3693
	Total	141	4.6064	.4802
[d]Job Orientation	Return	99	1.8606	.7042
$\alpha = .7921$	Withdraw	38	2.0158	.7387
	Total	137	1.9036	.7146
[b]Concern for Finances	Return	100	2.8075	.8739
$\alpha = .6478$	Withdraw	39	2.7821	.9686
	Total	139	2.8004	.8980

(continued)

Table 2.9 (continued)

	Registration Status	N	Mean	SD
[b]Educational Commitment	Return	99	4.6481	.5073
$\alpha = .8327$	Withdraw	40	4.6292	.4489
	Total	139	4.6427	.4897
[d]Institutional Commitment				
$\alpha = .8056$	Return	97	4.0348	.4676
	Withdraw	40	3.9281	.4501
	Total	137	4.0036	.4635
[c]Perception of Program				
$\alpha = .8328$	Return	100	3.7829	.6123
	Withdraw	40	3.7071	.7073
	Total	140	3.7612	.6392
[c]Intent to Leave				
$\alpha = .7069$	Return	101	1.8218	.7411
	Withdraw	39	1.9872	.8110
	Total	140	1.8679	.7619
[c]Peer Interaction				
$\alpha = .8074$	Return	100	4.0857	.5064
	Withdraw	40	3.9250	.5276
	Total	140	4.0398	.5158
[c]Faculty Interaction				
$\alpha = .7238$	Return	100	3.4350	.6293
	Withdraw	40	3.2000	.7098
	Total	140	3.3679	.6594

[a]Data for 199 study participants were unavailable.

[b]Data for 198 study participants were unavailable.

[c]Data for 196 study participants were unavailable.

[d]Data for 200 study participants were unavailable.

*Data for 197 study participants were unavailable.

Responses to five questionnaire items contributed to construct "job orientation". The Chronbach's alpha reliability coefficient of .7921 for these items was considered acceptable. The means for this construct recorded for the withdrawal group (2.0158) and the persister group (1.8606) indicated that, in general, the students preferred to maintain their program of study as opposed to leaving their program to take a job (see Table 2.9).

At mid-term, four questionnaire items corresponded to the construct "concern for finances". For the purposes of this research study, a Chronbach's alpha reliability coefficient of .6478 calculated for these items was considered acceptable. The means for the withdrawal group (2.7821) and the persister group (2.8075) indicated that the students were not generally concerned about their personal finances (see Table 2.9).

Students "educational commitment" was assessed by six questionnaire items. The overall Chronbach's alpha reliability coefficient of .8327 calculated for these items was considered acceptable for the purposes of this research study. The means for both the withdrawal group (4.6292) and the persister group (4.6481) indicated that the study participants were strongly committed to completing a post-secondary education (see Table 2.9).

Responses to eight questionnaire items were associated with the construct

"institutional commitment". For the purposes of this research study, a Chronbach's alpha reliability coefficient of .8056 calculated for these items was considered acceptable. The means for the withdrawal group (3.9281) and the persister group (4.0348) indicated that the students realized a personal commitment to the College (see Table 2.9).

The construct "perception of program" indicated students' perception of their program of study after the first-half of the semester. Responses to seven questionnaire items assessed this construct. The overall Chronbach's alpha reliability coefficient of .8328 calculated for these items was considered acceptable for the purposes of this research study. The means for the persister group (3.7829) and the withdrawal group (3.7071) indicated that, overall, students had a positive perception of their program (see Table 2.9).

Questionnaire items corresponding to the construct "intent to leave" assessed study participants' intention to discontinue their program of study following the fall 2000 semester. Responses to four questionnaire items were associated with this construct. The Chronbach's alpha reliability coefficient of .7069 for these items was considered acceptable. Low means for both the persister group (1.8218) and for the attrition group (1.9872) indicated that the likelihood that a student intended to leave following the fall 2000 semester was low (see Table 2.9).

The construct "peer interaction" evaluated study participants' perception of their interaction with their peers. Responses to 7 questionnaire items assessed this construct.

The overall Chronbach's alpha reliability coefficient of .8074 calculated for these items was considered acceptable for the purposes of this research study. The means for peer interaction for both the persister group (4.0857) and for the withdrawal group (3.9250) indicated that the study participants had a moderately high level value for interaction with fellow students (see Table 2.9).

The construct "faculty interaction" evaluated study participants' perception of their interaction with faculty members. This construct was assessed by study participants' responses to four questionnaire items. The overall Chronbach's alpha reliability coefficient of .7238 calculated for these items was considered acceptable for the purposes of this research study. The means for faculty interaction for the withdrawal group (3.2000) and the persister group (3.4359) suggest a moderately high value for social integration with faculty members (see Table 2.9).

Table 2.10 shows the results of analyses of variance carried out for each of the constructs assessed using the Student Experience Inventory. With the exception of "occupational uncertainty" there was no significant difference between the withdrawal group and the persister group based on any of the constructs. The significant difference between the withdrawal group and the persister group based on occupational uncertainty indicated that the study participants in the withdrawal group had a higher degree of occupational uncertainty at mid-semester.

Table 2.10

Analysis of variance for mid-term attitudes and perceptions of first-semester Engineering Technology students registered at the College of the North Atlantic during the fall 1999 semester.

	Source	df	Mean Square	F	Sig. F
Confidence in Success	Between Groups	1	.285	.611	.436
	Within Groups	136	.467		
	Total	137			
Occupational Uncertainty	Between Groups	1	2.701	4.876	.029
	Within Groups	137	.554		
	Total	138			
Value of Education	Between Groups	1	.176	.761	.384
	Within Groups	139	.231		
	Total	140			
Job Orientation	Between Groups	1	.661	1.298	.257
	Within Groups	135	.510		
	Total	136			
Concern for Finances	Between Groups	1	.001817	.022	.881
	Within Groups	137	.812		
	Total	138			
Educational Commitment	Between Groups	1	.001026	.043	.837
	Within Groups	137	.241		
	Total	138			

(continued)

Table 2.10 (continued)

	Source	df	Mean Square	F	Sig. F
Institutional Commitment	Between Groups	1	.322	1.506	.222
	Within Groups	135	.214		
	Total	136			
Perception of Program	Between Groups	1	.164	.399	.529
	Within Groups	138	.410		
	Total	139			
Intent to Leave	Between Groups	1	.770	1.329	.251
	Within Groups	138	.579		
	Total	139			
Peer Interaction	Between Groups	1	.738	2.810	.096
	Within Groups	138	.263		
	Total	139			
Faculty Interaction	Between Groups	1	1.578	3.700	.056
	Within Groups	138	.426		
	Total	139			

Summary.

Overall, statistical analysis of the withdrawal group and the persister group based on background, entry-level, and mid-term characteristics found that the two groups were significantly different with respect to five independent variables: (a) cumulative average

of all high school courses attempted; (b) final grade in grade 12 mathematics; (c) type of mathematics program taken in grade 12; (d) enrollment status; and (e) occupational uncertainty evaluated at mid-term. Two of these results should be interpreted with caution. First, although a significant difference was found based on the differences in enrollment status between the two groups, only 4.2% of the study participants were enrolled in the Engineering Technology program on a part-time basis. This finding may have been different if a larger portion of the study participants were part-time students. Second, the withdrawal and persisters groups were found to be significantly different based on their level of occupational uncertainty assessed at mid-term. It should be noted that only 141 (41.2%) of the 337 study participants completed this item on the Student Experience Inventory. It is possible that a different result might have been arrived at if a larger portion of the participants had completed this item. In addition, it should be noted that a number of the Chronbach's alpha reliability coefficients calculated for items for both the Partners in Education Inventory and the Student Experience Inventory had values less than .8. Although these values were accepted for the purposes of this study, one would normally expect higher reliability coefficients to be achieved when using standardized instruments.

Discussion

Previous studies of post-secondary student attrition have found that, depending on the institution, student attrition varies from approximately 30% to 50% (Bryant, 1999;

College of the North Atlantic, 1999; Deitsche, 1989; Ellis, 1991; Johnson & Buck, 1995; Smith, 1991). Research studies have also indicated that a significant proportion of student attrition occurs in the first year of post-secondary programs (Bryant, 1999; Ellis, 1991; Johnson & Buck, 1995). Considering these findings, the results of this study, which show a 24.9% first-semester student attrition rate for the Engineering Technology programs at the College of the North Atlantic, appear to be on par with that observed at other post-secondary institutions.

Overall, the results of this research study correspond with the model of student attrition put forward by Tinto (1975, 1987, 1993), the Student Integration Model. This model proposes that a better "fit" between student and institution results in greater academic and social integration. In turn, greater academic and social integration increases the likelihood that students will persist.

The most striking aspect of this study was the amount of emphasis on academic background and/or ability that was exhibited in the results. First, the feedback provided by both of the focus groups indicated that both faculty and students felt that the Engineering Technology programs at the College of the North Atlantic have a high degree of academic difficulty and that students' academic problems are the most significant contributor to student attrition at the College. By far, most discussion by each of the focus groups centered on students' academic difficulties at the College. Secondly, 45% of the early leavers interviewed for this study stated that their decision to withdraw was influenced by academic reasons. This was the most frequently cited reason for

withdrawal. Thirdly, the quantitative analysis component of this study showed that students who withdrew were significantly different from persisters with respect to: (a) the type of mathematics course they completed in Grade 12; (b) their final grade in Grade 12 mathematics; and (c) their overall high school cumulative average. Compared to those who withdrew, persisters were more likely to have attained a higher overall high school cumulative average and a higher final grade in Grade 12 mathematics. And, compared to students who withdrew, persisters were likely to have completed a more advanced mathematics course in Grade 12. These results mirror the conclusions of numerous other studies which indicate that higher levels of academic achievement in high school (Byrne, 1991; De Rome & Lewin, 1984; Deitsche, 1990; Johnson, 1994; Murtaugh et al., 1999; Sharpe & Spain, 1993) and that higher levels of academic integration in college (Cabrera et al., 1993; Deitsche, 1990; Johnson, 1994; Pascarella & Chapman, 1983; Romano, 1995; Tinto, 1993) are positively correlated with persistence in post-secondary programs.

In addition to the above findings, this study confirmed the results of Lam (1984) and Windham (1994) who found that part-time students were more likely to withdraw than full-time students. Although, as indicated previously, the results in this study may be questionable due to the small percentage of part-time students in the sample, it is possible that, because of family or employment reasons, part-time students have less time to dedicate to their program than full-time students. This is plausible, considering the emphasis that both the student and faculty focus groups placed on the academic demands of the Engineering Technology programs.

Although the validity of the result is subject to question, the quantitative data analysis in this study suggests that students who withdraw are more likely to be uncertain about their future employment opportunities than those who persist. This result is interesting since participants in the faculty focus group felt that students who had a high level of uncertainty about their occupation after graduation are more unlikely to persist.

As well as suggesting that academic problems are a significant cause of student attrition at the College of the North Atlantic, the student and faculty focus groups both identified other factors which influence attrition. Both groups suggested that students who have been away from high school for some time before enrolling in a post-secondary program are more likely to withdraw early. Although this is not substantiated by the post-secondary attrition literature, this suggestion is worth investigating through further research. Both focus groups also indicated that students with a greater motivation to succeed are more likely to persist. A number of research studies have found that student goal commitment has a significant impact on their decision to persist or withdraw (Deitsche, 1990; Sarkar, 1993). The student focus group also indicated that working while attending college is a potential cause for post-secondary student attrition since it results in reduced time for studying. The results of studies conducted by both Fralick (1993) and Windham (1994) correspond with this assessment.

In addition to seeking to explain post-secondary student attrition, educators have been concerned about its effects. It has been suggested that a negative experience with post-secondary education is often a disincentive to pursue further post-secondary study.

However, in this research study, 68% of the early leavers interviewed indicated that they intended to pursue post-secondary education in the future. This result is similar to those obtained by researchers at the College of the North Atlantic (College of the North Atlantic, 1999) and Memorial University of Newfoundland (Bryant, 1999).

Recommendations

Although the results of the quantitative component of this study did find several of the independent variables to be significant, many of the variables that have been found to contribute to post-secondary student attrition in the past were not. It is recommended that additional research in this area be conducted at the College of the North Atlantic. It is also recommended that this research be longitudinal in design and be conducted for the duration of the three-year study period required for the Engineering Technology (or other) programs at the College. This may identify differing patterns and reasons for attrition from specific program groups.

The results of this study also indicated that in some cases students fail to persist beyond the first semester of study because their academic preparation has been insufficient. It is recommended that the College consider reviewing its admission requirements in order to ensure that new entrants to its Engineering Technology programs are better prepared. Alternatively, the College might consider instituting measures that will ensure that new entrants are aware of the heightened academic requirements associated with study at the College. For example, the College could

provide samples of entry-level course material to new entrants in order to provide them with an impression of the degree of difficulty associated with its Engineering Technology programs. It is also recommended that the College of the North Atlantic develop and institute an in-depth student orientation strategy which will introduce new entrants to the academic and guidance support services available at the College.

Because the issue of student attrition is an ongoing concern, it is further recommended that the College of the North Atlantic review and research attrition on a on-going basis and develop an institution-wide strategy for reducing the incidences of student attrition.

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Appendix A

Job Search Information Kit

Source: Kirby, D. (1999). Job Search Information Kit. College of the North Atlantic: St. John's, NF.

INTRODUCTION

This pamphlet has been designed to provide job hunters-whether they are students or graduates-with helpful information for planning and executing a job search. In this kit you'll find information on employability skills, cover letter and resume writing, conducting job searches, and job interviews. The advice and strategies included here are proven and will work. However, the key ingredients in a successful job search are confidence and persistence.

EMPLOYABILITY SKILLS

Employability skills are the skills, attitudes and behaviors that employers look for in new recruits and that they develop through training programs for current employees. In the workplace, as in school, skills are required and used in different combinations, depending on particular job activities.

HOW ARE EMPLOYABILITY SKILLS DEVELOPED?

Employability skills are developed in school and through life experiences inside and outside of school. A working knowledge of the skills necessary for employability will enhance your efforts to meet your career goals and objectives.

EMPLOYABILITY SKILLS SOUGHT BY EMPLOYERS

15 Traits Sought By Employers

1. Ability to communicate
2. Flexibility
3. Intelligence
4. Interpersonal Skills
5. Willingness to accept responsibility
6. Self-knowledge
7. Initiative
8. Ability to handle conflict
9. Leadership
10. Competitiveness
11. High energy level
12. Goal achievement
13. Imagination
14. Direction
15. Vocational Skills

12 "Hottest" Skills Any Student Can Acquire

1. Budget management
2. Public Speaking Ability
3. Supervisory Skills
4. Writing Skills
5. Public Relations
6. Organizing Skills
7. Management Skills
8. Coordinating Skills
9. Ability to Cope with and Meet deadlines
10. Interviewing Skills
11. Negotiating Skills
12. Teaching/Instructing

How you can Acquire these Skills

1. Volunteer work
2. Part-time/summer jobs
3. Participation in activities--school or community
4. Study/work/travel overseas
5. Internships
6. Seek out new experiences, new friends, new places
7. Specific skill courses – at your college or university

Remember: Employers Hire People With Skills, Not Just Diplomas or Degrees!

COVER LETTERS

Always include a cover letter along with your resume. The cover letter is often the first impression that an employer has of you ... and often the first impression is a lasting impression! Don't do a rush job on your cover letter ... prepare your cover letter with as much care and detail as you do your resume!

Your cover letter should answer the question: *Why should we hire you?* You should do some research before writing the cover letter so that you will be able to customize your letter to meet the needs of the prospective employer. Show that you understand their organization and industry ... don't send form letters. Of course it is possible that some employers will skip the cover letter and head straight to the resume first, but don't take that chance and risk blowing your chance by cutting corners!

Make the employer want to meet with you by showing how your skills and experience meet their needs. It takes time to create effective targeted cover letters, but it is definitely worth the time and effort.

Here are some tips for writing cover letters:

- Don't address your letter "Dear Sir or Madam" or "To Whom It May Concern"; find out who the specific person receiving the applications will be, even if you have to make a dozen phone calls to learn the contact's name. Be sure to use correct spelling and his or her title, and address the letter to him/her.

- Check your spelling and grammar and proofread it over and over again; use a word-processing package with built-in spell-checking and ask a friend to check it too ... if you don't take the time and effort at this point, what should the employer expect from you after you have been hired!

- Never write a cover letter by hand -- Use a word-processor and printed on a good ink-jet or laser printer.

- Use an active voice and take ownership for your accomplishments, but don't start every sentence with "I".

- Send a customized cover letter for every position you are applying for, not a form letter. Form letters will not impress the hiring manager. You must research the company and determine the traits and qualities they are looking for.

- Be specific ... saying you are efficient, a team player, or have excellent communication skills is fine, but back it up with specifics from your experiences.

- Don't just repeat what is on your resume. Take the opportunity to tell the employer what you can do for the company- that is, why you should be hired for this particular position at that particular company.

- Keep it brief ... cover letters should be kept to one page, and in general, paragraphs should be kept to four to six lines or so. Full-block format is typically used.

- Use special effects (bold, different fonts, colour) sparingly or not at all; keep it professional. A standard font (Arial or Times Roman, 12 point size) is usually a good idea.

RESUME FORMATS

Although there are numerous opinions on which resume format to use, there is no "right" resume style or format. There are a number of suggested general formats, the three basic types are the chronological resume, the functional resume, and the technical resume.

THE CHRONOLOGICAL RESUME FORMAT

The chronological resume format is probably the most widely used of resume formats. This format is useful for those who have limited work experience and the recently graduated. Items are listed and arranged in reverse chronological order and organized by traditional headings like objective, education, experience, special skills, references. This resume can be prepared relatively quickly and easily and is a format that will be familiar to prospective employers.

THE FUNCTIONAL RESUME FORMAT

The functional resume format is designed to highlight the qualifications of the applicant with much less emphasis on specific work titles and dates. This format is suggested for those who have a diverse work history or who are making a career change. The strong points of this resume are that it allows you to highlight skills that are relevant to your job objective, minimizes gaps in time, and can be varied to emphasize or de-emphasize work history and job titles. The limitations of this resume are that it takes longer to prepare, can be difficult to read unless it is well written, and may be unfamiliar to prospective employers.

THE TECHNICAL RESUME FORMAT

The technical resume format combines aspects of the chronological and functional resume formats. It can be a powerful and flexible tool for the job seeker with special skills he/she wants to emphasize. This type of resume is a good choice for recent graduates with some job experience. Like the chronological resume, it chronologically lists job history and education, while allowing the job seeker to highlight what makes his/her qualifications especially marketable by adding additional details.

A Guide For Writing Resumes

A. What is a resume?

A resume is a one or two page summary of your skills, accomplishments, experiences, and education designed to capture a prospective employer's interest. **The purpose of a resume is to secure an interview.** It is the primary tool of your job search and may take several drafts to prepare effectively. Here are some suggestions and guidelines for you to use as you construct, write and print your resume.

B. Building an effective resume

I. Self-Assessment

First, identify your skills and abilities as well as your special needs relating to the work environment, salary, geographic location, and people environment. This will help you to develop a career objective.

A. List all of the skills which you have developed in each of the following areas:

Education / Work/ Internship or Volunteer / Extracurricular.

Use action words to develop one-line summaries of these skills.

B. Circle each of the skills noted in part A that you could use in your employment. Are there other talents you possess that you could use on the job? If so, add them to the list of circled skills.

C. Make a list of what you consider to be 5 great accomplishments in your life. What personal qualities helped you reach each goal? List these qualities.

II. Career Exploration

Collecting information regarding required skills and qualifications for occupations which interest you is extremely important. This information will help you decide if and how these requirements relate to your own skills and needs.

III. Writing the Resume

As you organize your resume, keep in mind the needs of the employer who will be reading it. Consider what skills they are looking for in a candidate and make it easy for the reader to pick out those skills by selecting appropriate categories, using underlining, boldfacing or capitalizing, and presenting relevant experience and skill areas higher on the page.

Keep in mind the following suggestions:

1. Sell yourself. Create a good first impression by highlighting skills and abilities appropriate to the position.

2. Use active language / action words to spice up your resume (see list of sample action words attached).

3. Be consistent. Choose a pattern of spacing, an order of information presentation or a format of highlighting and be consistent throughout. Use headings consistently, i.e. same font, same

size, etc. Don't overuse design elements such as bold, fancy fonts, etc - it will make your resume hard to read. Choose a standard font (i.e. Arial or Times New Roman).

4. Present information in reverse chronological order within categories. List education and work experiences starting with the most recent first.

5. Check for grammar. Misspellings and poorly constructed sentences communicate negative impressions about a candidate. **Have someone proof read your resume!**

6. Ensure that your resume is neat. Choose high quality paper in white, off-white--not flashy colors. Standard, inexpensive office paper is generally acceptable for most positions.

C. MAKE YOUR RESUME UNIQUE

Develop your own categories to highlight your special relevant experiences and skills. It is sometimes useful to separate your related or professional experiences from your other work experience by creating separate categories for these areas. This way you can call more attention to your relevant skills by putting them in categories closer to the top of the resume so they are read first.

Here Are Some Examples:

Student Teaching Experience	Conferences Attended	Leadership
Related Experience	Technical Skills	Accomplishments
Experience With Children	Special Skills	Professional Memberships
Related Courses	Computer Skills	Military Experience
Community Volunteer Work	Certificates	Language Proficiencies
Workshops Attended	Travel	Additional Information

Also, instead of Related Experience you might want to indicate the specific field of experience. For example: Business Experience, Engineering Experience, Human Services Experience, Sales Experience, etc.

D. RESUME CONTENT AREAS

The following categories can be used as a guideline to assist you in organizing a draft resume. Do not be concerned with length. Categories may be omitted or added later. **There is no absolute correct way to organize your resume.** Creativity is encouraged. The following are descriptions of the basic categories of the standard resume:

I. NAME, ADDRESS AND TELEPHONE

Give the name you use in your personal and business life (nicknames should be avoided). If you have an address that does not apply during vacations or after graduation, you should present both addresses. Use your parents' home address, a post office box, or someone who will know where to contact you at all times. Also, always include phone numbers with area codes. If you have an e-mail address, you might want to include that as well.

II. OBJECTIVE

The objective is one of the most important parts of a resume and should not be overlooked. It tells potential employers that you are moving in a certain direction and relates your work preference(s). It should be brief, clearly stated, and consistent with the accomplishments and demonstrated skills on your resume.

Sample Objective:

Position within a financial institution requiring strong analytical and organizational skills.

III. Education

This category is particularly important if you have not had a great deal of work experience. Your most recent educational experience should be listed first.

Include your diploma(s) or degree(s), major, institution(s) attended, date of graduation, minors or concentrations, and any special workshops, seminars, related coursework or senior projects. A higher than average G.P.A. should also be noted here.

IV. Work Experience

Many students have limited paid work experience, but have been involved in volunteer, internship, or student teaching work experiences. The important point to the employer is what your skills are and what you can do on the job. Be sure to include all significant work experience in reverse chronological order.

Include: (1) the title of your position, (2) name of organization, (3) location of work (town, state), and (4) dates (ex. Summer 1994; 1994-95 academic year)

Describe your work responsibilities with an emphasis on achievements using action words to communicate your skills. List the most important responsibilities first. Identify the most relevant work experiences and describe them fully. Be brief with the irrelevant work experience or omit it entirely. It may be useful to divide your work experience into two categories: Relevant Experience and Other Experience.

V. Additional Information

This category is useful for displaying information that doesn't fit in any other category. Although Interests, Computer Knowledge, and Activities can be separate categories, especially if they are very strong, they can be listed here as well. Languages spoken, or any extra, relevant bit of information can be placed here as well.

Interests:
Include this section only if you have available space. Include social or civic activities, health and fitness or sports activities, or hobbies which indicate how you spend your leisure time.

Computer Knowledge:
If using computers is a necessary skill for the job you are seeking, be sure to highlight your knowledge by adding this section. Example: Software: Lotus, DBASE III, WordPerfect 5.1, Microsoft Word, Excel, SAS, Real World Accounting Hardware: IBM 3090 Mainframe, AT&T 386, IBM PC, Macintosh

Activities, Honors, and Leadership:
These are also important categories to include. If the activities involved work responsibility, note it in some detail. The employer is interested in the skills you have developed whether through volunteer or paid experiences. If you were elected to offices or committees, mention it. Recognition and demonstration of leadership roles are valuable.

References:
Be sure to ask individuals if they would be willing to be a "good" reference for you prior to mentioning their names to prospective employers. Names of individuals are not usually listed on the resume (unless there is space available at the end), but you should prepare a typed list of

three references to provide at the interview. This list should include name, title, employer, address, business and home telephone number. You may also state at the bottom of your resume "References available upon request."

ACTION WORDS

Here is a list of some action words that you can incorporate into your resume. If you are writing about an activity which occurred in the past, use the past tense (e.g. budgeted). If the activity is occurring now, use the present tense (e.g. budget).

achieved
acquired
adapted
addressed
administered
analyzed
anticipated
assembled
assisted
audited
budgeted
calculated
centralized
changed
collaborated
composed
condensed
conducted
constructed
contracted
converted
coordinated
created
cultivated
demonstrated
designed
developed
devised
discovered
doubled
drafted
edited
eliminated
enforced
established
evaluated
expanded
explained
forecasted
formed
founded
generated
guided
hired
implemented
improved
informed
insured
interpreted
interviewed
launched
maintained
managed
marketed
minimized
motivated
negotiated
obtained
operated
organized
originated
oversaw
performed
planned
prevented
produced
promoted
provided
publicized
published
recruited
reorganized
reported
researched
resolved
reviewed
selected
separated
set up
simplified
solved
surveyed
staffed
supervised
taught
tested
trained
utilized

THE JOB SEARCH

A successful job search is often directly related to the depth and intensity of your search. It is best to treat your job search like a job in itself.

JOB SEARCH TECHNIQUES

There are several strategies that you can use in your search. Job opportunities are not limited to the ads' section of your local newspaper.

THE INTERNET

The internet provides an abundance of information about the jobs that are available. If you do not have internet access at home, use computers at your college or university, your local public library, or employment center.

UNCOVERING HIDDEN OPPORTUNITIES

It is said that approximately 80 percent of job openings are never advertised. The following information is designed to help show you how to access the hidden job market through networking, professional associations, volunteering and company / industry research.

NETWORKING

Networking means connecting with a wide variety of people who may be able to help you with your job search. You'll be able to discover how your skills and experiences relate to your chosen profession, practice your interviewing skills, increase your visibility in the field, and hopefully discover hidden opportunities.

Talk to friends, family, past teachers and professors, alumni from your university/college, and contact a professional association to find others in the field who may be willing to speak with you. Get involved in your local community or take a night course in your field. Remember that networking is a two-way street; you should be helping others as well as asking for help. Keep your network active, even when you find the job you want, in order to stay prepared for your next career move. Be sincere, keep your contacts informed of your progress and always remember to thank them for their assistance.

Professional Associations

Find an association in the field that you want to work in and become an active member. Meet as many other members as possible to learn about the industry and hopefully uncover hidden opportunities. Surf to their web site and discover that many associations have industry specific online job boards and/or discussion groups for their members (some password protected, some not) and recent articles about the field. Find out what conferences or other events are coming up and try to attend them.

Volunteering

Volunteering is an opportunity to develop new skills, expand your horizons and enjoy helping others in your community. In addition, volunteering can help you expand your network, strengthen your resume and give you personal satisfaction. Volunteering can be particularly helpful for those with little practical experience in their chosen field. Volunteer agencies often need people to assist with marketing, special events, office and computer systems and much more. Employers will applaud your initiative and commitment to your career and community.

Before taking on a volunteer opportunity, be sure to know what the position involves, how much time will be expected of you and that it is a good fit with your values and career goals. Although volunteering is a good way to gain experience, refine skills and develop contacts, it should also be fun and rewarding.

Industry & Company Research

Research is the key to an effective and successful career plan and work search. Research is necessary to define your career goals, write cover letters and resumes, and prepare for job interviews. It is also a critical skill in order to find opportunities in the hidden job market. Fortunately, the internet is a wonderful resource tool which you can access 24 hours a day, 365 days per year, from your own home (if you own a computer). You can use the internet to do online research that will help you learn more about your chosen profession, keep abreast of current developments, target specific employers for your job search and prepare for upcoming information and job interviews.

THE INTERNET JOB SEARCH

The internet provides an abundance of information about the jobs that are available. If you do not have internet access at home, use computers at your college or university, your local public library, or employment center.

Here is a list of 60 internet job sites that will be useful in your job search:

HRDC National Job Bank	www.hrdc-drhc.gc.ca
Canada Work Infonet	www.workinfonet.ca
Work Search	www.worksearch.gc.ca
Canadian Job Board	ww.ccommnet.nf.ca/jobs
Nova Scotia Employment	www.gov.ns.ca/humr/employ
British Columbia Work Infonet	www.workinfonet.bc.ca
New Brunswick Job Infonet	www.nbjobnet.gov.nb.ca
Atlantic Canada Careers	www.acc.net
British Columbia Job Postings	www.postings.gov.bc.ca
Saskatchewan Careers	www.gov.sk.ca/psc/jobs
Manitoba Careers	www.gov.mb.ca/csc
Business and Employment Info	www.publib.nf.ca/Careers
Hitech Career Center	www.hitechcareer.com
Canada Employment Weekly	www.mediacorp2.com
Canadian Jobs Catalogue	www.kenevacorp.mb.ca
Electronic Labour Exchange	www.ele.hrdc-drhc.gc.ca
IBM Employment in Canada	www.can.ibm.com/hr/career
Canada's Campus Career Center	www.cacee.com
Royal Roads University Career Center	www.royalroads.ca/rls/crc
Center for Career Development	www.mun.ca/ccd
Job Shark	www.jobshark.com
Canada's Employment Site	www.netjobs.com
Career Edge Internship	www.careeredge.org
Experience Canada	www.experiencecanada.com
Youth Resource Network	www.youth.gc.ca
Newfoundland Jobs	www.gov.nf.ca/psc/psc_jobs.htm
Nortel Job Search	www.jobsearch.nortel.newjobs.com
Canadian Careers	www.canadiancareers.com
Canadian National Careers	www.globecareers.com
Career Bridge	www.careerbridge.com
Career Mosaic Canada	www.canada.careermosaic.com
Career Magazine	www.careermag.com
Maze Master	www.mazemaster.on.ca
Public Service Commission	www.psc-cfp.gc.ca/recruit
Campus Worklink & NGR	www.WorkLinkNGR.com
Work Pathfinder	www.harbour.sfu.ca/scwist/pathfinder
British Columbia Agricultural Labour Pool	www.agri-labourpool.com
Center for Corporate Resources	www.corporate-resources.com

The Riley Guide	www.riley.com
St. Charles Worksite	www.worksitecanada.com
Directory of Canadian Recruiters	www.gocontinental.com
Jobs R Us	www.jobsrus.com
Job Track Listing Service	www.jobtrack.com
Employment Cafe	www.café.sdc.uwo.ca
HR Management	www.jobstat.com
The Personnel Department	www.goodstaff.com
Frontline Resources	www.frontline.nf.net
Student Employment Network	www.studentjobs.com
Strive Career Center	www.strivemag.com
American Job Bank	www.ajb.dni.us
Virtual Job Fair	www.jobcenter.com
The Career Path	new.careerpath.com
Monster Board Jobs	www.monster.com
Career Resource Centre	www.careers.org
Job Matching Services	www.tiac.net/users/jobs
Medzilla Job Search	www.medzilla.com
Head Hunter	www.headhunter.net
Job Source Network	www.jobsourcenetwork.com
Americas Technical Services	www.atsjobs.com
Job Web	www.jobweb.com
The Career Site	www.careersite.com
The TEFL Job Centre	www.jobs.edunet.com

THE JOB INTERVIEW

For most people, the job interview is the single most intimidating part of the job search. What can you do to help ease the jitters and boost your confidence?

PREPARING FOR INTERVIEWS

Prepare, prepare, and prepare. Anticipate questions that may be asked, research the company and industry, and go through mock interviews with a friend. Remember that interviews are a two-way street. Prepare to ask questions yourself - take the opportunity to make sure the position is a good fit for you too!

RESEARCH, RESEARCH, RESEARCH

Research is critical before attending a job interview. If you don't take the time and effort to learn about the company before your interview, employers may wonder if you really want to work for them after all. Research the industry in general and get a feel for the company's history and recent activities, find out what products/services they provide, who their competitors are, etc.

Visit the company web site if they have one. It will usually give you a good feel for the company and what they do. The more you know about the company the better off you'll be in an interview.

Visit the web site for a professional association in your field. Industry associations can provide you with valuable insight into how your industry operates, who the key players are, and what the current trends are. If you need the address of a web site of an association for your industry, try using an internet search engine to find it.

TIPS FOR INTERVIEW SUCCESS

- Be on time - there is no excuse for being late for an interview; allow lots of extra time.
- Bring extra copies of your resume, a list of references, a notepad and a pen.
- Be sure to make eye contact; if you don't, you may be seen to lack confidence.
- Know your skills and be ready to articulate how they relate to the position you are interviewing for.
- When necessary, allow yourself a moment to collect your thoughts before answering a question.
- Don't answer with yes or no answers - elaborate ... sell yourself by giving a specific example.
- Don't try to cover up past mistakes; show how you learn from your experiences.
- Answer questions honestly

- Be prepared for the general "tell me a bit about yourself" question; rehearse your key points ahead of time.
- Be prepared for questions designed to see how you react under pressure - keep calm.
- Don't use slang; use proper words (eg. "going to" instead of "gonna").
- Don't interrupt the interviewer.
- Never speak badly about your past employers.
- Be prepared with questions (see a few samples below).
- Don't bring up salary if at all possible; make sure you have done your industry research in case the interviewer brings it up - if necessary, give a range of what you are willing to accept (it is better to discuss salary when you get the offer).

Questions You Might Be Asked

- Tell us about yourself
- What do you know about our organization?
- What interests you about our company?
- What are your strengths and weaknesses?
- What are your related skills?
- What did you most/least enjoy about your last job?
- Why did you leave your last job?
- Why did you choose your area of study in university/college?
- What motivates you?
- Do you prefer working alone or as part of a team?
- What is the biggest challenge you have faced?
- What do you see yourself doing in 5 years?
- How did you prepare for this interview?
- Why should we hire you for this position?

Questions You Could Ask

Take the opportunity to ask questions about the company and position in order to determine if it is a good fit for you and to show the employer that you are interested in the position.

- What are the greatest challenges facing your organization?
- What is a typical day like in this position?
- How would you describe the culture of your organization?
- What types of career possibilities would this position lead to in your organization?
- How are employees evaluated?

- What orientation and training opportunities are available for employees?

THANK YOU LETTERS

Always send out a thank you note following your interview. It is quick and relatively simple to prepare and may differentiate you from other applicants who were interviewed. Keep it short and simple and reiterate your interest in the position.

References

Resume Magic: Master Resume Writer's Secrets Revealed
http://www.liglobal.com/b_c/career/res.shtml

Mississippi State University Cooperative Education Program: Interviewing and Resume Information.
http://www.msstate.edu/Dept/Coop/interview.html

Elements of a Successful Interview: A Checklist
http://riceinfo.rice.edu/projects/careers/channels/six/Interview/text/The.interview.html

Quick Guide to Resume Writing
http://cardinal.umeais.maine.edu/~career/sampleres.html

Guide to Resume Writing
http://www.jobweb.org/catapult/guenov/res.html#what

Your Resume...
http://owl.english.purdue.edu/Files/35.html

Top Ten Technical Resume Writing Tips
http://www.taos.com/resumetips.html

Appendix B

Letter of Permission to Access College Student Records

Dear Sir/Madam,

I am a graduate student in Faculty of Education at Memorial University of Newfoundland who is presently completing an internship and research at the College of the North Atlantic.

As outlined in my internship proposal, my research will consist of a study of student attrition and retention at the Engineering Technology Center campus of the College of the North Atlantic. I am requesting your permission to access college student records in order to study potential variables related to attrition. These variables include students' age, gender, high school marks, and college grade point average. I am also seeking permission to use data collected through the use of the Freshman Integration and Tracking System (FIT) at the Engineering Technology Center campus.

All information gathered in this study is strictly confidential and at no time will individuals be identified. The results of my research will be made available to you upon completion of the study.

If you are comfortable in authorizing my request please sign below and return this copy to me. If you have any questions please contact me by phone at (709) 738-0506 or by email at dkirby@morgan.ucs.mun.ca.

I _____ (College of the North Atlantic Official) hereby grant permission for Dale Kirby to access college student records and additional data collected through the use of the Freshman Integration and Tracking System (FIT) for the purposes of studying student attrition and retention at the Engineering Technology Center campus of the College of the North Atlantic.

Sept. 17/99
Date

College of the North Atlantic Official

Appendix C

List of questionnaire items from the Partners in Education Inventory that were utilized for this study.

Source: Dietsche, P. (1999). FIT System 2.0: Partners in Education Inventory. Humber College: Etobicoke, ON.

List of questionnaire items from the Partners in Education Inventory that were utilized for this study.

Question	Responses
10. Please indicate the highest level of education you have received so far. (Choose one response).	0 - less than secondary school diploma 1 - secondary school diploma 2 - partial college studies 3 - college diploma 4 - partial university studies 5 - university degree (B.A., B.Sc., etc.)
17. Father's highest level of education.	1 - less than elementary school completion 2 - completed elementary school 3 - some high school 4 - completed high school 5 - some trade/vocational school 6 - completed college or CEGEP 7 - some university 8 - completed Bachelor's degree 9 - partial Master's or Ph.D. study 10 - completed Master's or Ph.D. 11 - completed professional degree (lawyer, M.D.)
18. Mother's highest level of education.	1 - less than elementary school completion 2 - completed elementary school 3 - some high school 4 - completed high school 5 - some trade/vocational school 6 - completed college or CEGEP 7 - some university 8 - completed Bachelor's degree 9 - partial Master's or Ph.D. study 10 - completed Master's or Ph.D. 11 - completed professional degree (lawyer, M.D.)
23. How certain are you that you will successfully complete your program of studies?	5 - very certain 4 - certain 3 - undecided 2 - a little certain 1 - quite uncertain

32. It is important that I complete my program and obtain a diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
34. I am capable of getting a B+ (78%) average or better in my courses.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
35. I am not sure what kind of work I will be doing after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
36. I am very certain that I will complete my program in the usual time (e.g. 2 year program in 2 years, 3 year program in 3 years).	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
38. I may quit my studies before I finish my program.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
39. I could benefit greatly from special help in securing financial aid for my education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
40. I have chosen the program I am in because I have a particular career/job in mind.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

42. I am very certain that I will obtain a college diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
43. Obtaining a college diploma/certificate will influence my future job prospects.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
45. I have the ability to succeed in college-level studies.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
46. My goal in college is to study only until a job becomes available.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
47. Difficulty financing my studies may mean that I will have to leave college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
48. I am determined to finish my college education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
49. I am not sure how the program I am in is related to my future career.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

51. I may not continue with my studies next semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
52. My goal in college is to take a few courses without completing a program.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
53. College graduates have a better chance of finding jobs than do non-graduates.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
55. I am quite sure about the kind of work I will be doing after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
56. It is NOT important that I graduate with a diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
57. I would decide to remain in college even if offered a full-time job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
58. I feel undecided about what my career will be after I finish college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

60. I am dependent upon financial aid in order to pay for my education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
62. I would rather be working full-time rather than studying right now.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
63. I feel my program is directly related to the type of work I will have after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
64. I think I am well prepared to be a successful student in college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
65. Paying for my education is NOT going to be a problem for me this semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
66. If I work hard in my college program I am more likely to get a good job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
67. My goal in college is to complete a program on a full-time basis.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

68. College graduates find more satisfying jobs than non-graduates.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
69. If I had the chance to have a full-time job I would take it and leave college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
70. I do NOT think my program is of high quality.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
71. College staff I have had contact with care about helping students with their problems.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
74. I did NOT make the right decision in coming to this college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
75. The faculty in my program are excellent teachers.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
76. So far college staff have been friendly and welcoming.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

77. I consider this to be an excellent college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
79. I feel that this is NOT the best college for me.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
80. This college is concerned with helping students succeed.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

Source: Dietsche, P. (1999). FIT System 2.0: Partners in Education Inventory. Humber College: Etobicoke, ON.

Appendix D

List of questionnaire items from the Student Experience Inventory that were utilized for this study.

Source: Dietsche, P. (1999). FIT System 2.0: Student Experience Inventory. Humber College: Etobicoke, ON.

List of questionnaire items from the Student Experience Inventory that were utilized for this study.

Question	Responses
16. How certain are you that you will successfully complete your program of studies?	5 - very certain 4 - certain 3 - undecided 2 - a little certain 1 - quite uncertain
22. It is important that I complete my program and obtain a diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
23. I may transfer into another program at the end of this semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
24. I am capable of getting a B+ (78%) average or better in my courses.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
25. I am NOT sure what kind of work I will be doing after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
26. I am very certain that I will complete my program in the usual time (e.g. 2 year program in 2 years, 3 year program in 3 years).	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

28. I find it easy to make friends in new situations.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
29. I may quit my studies before I finish my program.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
30. I could benefit greatly from special help in securing financial aid for my education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
31. I have chosen the program I am in because I have a particular career/job in mind.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
32. I will continue in my present program next semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
34. I am very certain that I will obtain a college diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
35. Obtaining a college diploma/certificate will influence my future job prospects.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

37. I have the ability to succeed in college-level studies.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
38. My goal in college is to study only until a job becomes available.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
39. Difficulty financing my studies may mean that I will have to leave college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
40. I am determined to finish my college education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
41. I am not sure how the program I am in is related to my future career.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
43. I may not continue with my studies next semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
44. My goal in college is to take a few courses without completing a program.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

45. College graduates have a better chance of finding jobs than do non-graduates.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
47. I am quite sure about the kind of work I will be doing after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
48. It is NOT important that I graduate with a diploma/certificate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
49. I would decide to remain in college even if offered a full-time job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
50. I feel undecided about what my career will be after I finish college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
51. I considered dropping out of my program at least once this semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
52. I am dependent upon financial aid in order to pay for my education.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

54. I would rather be working full-time rather than studying right now.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
55. I feel my program is directly related to the type of work I will have after I graduate.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
56. I think I am well prepared to be a successful student in college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
57. Paying for my education is NOT going to be a problem for me this semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
58. If I work hard in my college program I am more likely to get a good job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
59. My goal in college is to complete a program on a full-time basis.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
60. College graduates find more satisfying jobs than non-graduates.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

61. If I had the chance to have a full-time job I would take it and leave college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
62. I find most of the information being discussed in my program dull.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
63. Students I know in my program are willing to help each other with problems in their courses.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
64. I have developed a good relationship with at least one faculty member at this college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
65. I find my program interesting.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
67. The student friendship(s) I have developed at this college are enjoyable.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
68. Outside of class discussions with faculty have influenced my interest in new ideas.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

69. It has been difficult for me to meet and make friends with other students.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
70. My program is providing me with the skills and knowledge I will need to succeed in my future job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
71. I'm beginning to think that the program I'm taking is not what I want.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
72. Since coming to this college I have become close friends with several other students.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
73. The topics being covered in my courses are important for my future success.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
74. At this time I feel like I "fit in" at this college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
75. My interactions with faculty have helped me better understand my future job.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

76. I find most of what I am learning in my program irrelevant.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
78. Student friendships in college have helped me cope with the stress of college life.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
80. I find it hard to pay attention in most of my classes.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
83. Faculty in my program have been willing to help with course-related problems.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
84. I do NOT think my program is of high quality.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
85. College staff I have had contact with care about helping students with their problems.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
87. I did NOT make the right decision in coming to this college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

88. The faculty in my program are excellent teachers.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
89. So far college staff have been friendly and welcoming.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
90. I consider this to be an excellent college.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
91. I will continue my studies at this college next semester.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
92. I feel that this is NOT the best college for me.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree
93. This college is concerned with helping students succeed.	5 - strongly agree 4 - agree 3 - neutral 2 - disagree 1 - strongly disagree

Source: Dietsche, P. (1999). FIT System 2.0: Student Experience Inventory. Humber College: Etobicoke, ON.

Appendix E

List of Independent Variables and Corresponding Questionnaire Items

Independent Variables and Corresponding Questionnaire Items
(Items identified with an asterisk had values reversed in order to produce a unidirectional scale)

Variable	Items from Partners in Education Inventory	Items from Student Experience Inventory
Confidence in Success	Item 23*, Item 34, Item 36, Item 42, Item45, Item 64	Item 16*, Item 24, Item 26, Item 34, Item 37, Item 56
Occupational Uncertainty	Item 35, Item 40*, Item 49, Item 55*, Item 58, Item 63*	Item 25, Item 31*, Item 41, Item 47*, Item 50, Item 55*
Value of Education	Item 43, Item 53, Item 66, Item 68	Item 35, Item 45, Item 58, Item 60
Job Orientation	Item 46, Item 52, Item 57*, Item 62, Item 69	Item 38, Item 44, Item 49*, Item 54, Item 61
Concern for Finances	Item 39, Item 47, Item 60, Item 65*	Item 30, Item 39, Item 52, Item 57*
Educational Commitment	Item 32, Item 38*, Item 48, Item 51*, Item 56*, Item 67	Item 22, Item 29*, Item 40, Item 43*, Item 48*, Item 59
Institutional Commitment	Item 70*, Item 71, Item 74*, Item 75, Item76, Item 77, Item 79*, Item 80	Item 84*, Item 85, Item 87*, Item 88, Item 89, Item 90, Item 92*, Item 93
Perception of Program	N/A	Item 62*, Item 65, Item 70, Item 71*, Item 73, Item 76*, Item 80*
Intent to Leave	N/A	Item 23, Item 32*, Item 51, Item 91*
Peer Interaction	N/A	Item 28, Item 63, Item 67, Item 69*, Item 72, Item 74, Item 78
Faculty Interaction	N/A	Item 64, Item 68, Item 75, Item 83

Appendix F

Explanatory Project Statement and Focus Group Questions

Explanatory Project Statement and Focus Group Questions

My name is Dale Kirby and I am an intern in the Student Services Division at the College of the North Atlantic. I am a graduate student in Faculty of Education at Memorial University of Newfoundland. I am researching student attrition and retention at the College.

Your participation in this focus group is entirely voluntary and all of your responses are strictly confidential. No individuals will be identified. As it is unwieldy to make notes of your comments, I will be recording this session on audiotape. The tapes will be destroyed after my research has been completed approximately 6 months from now.

The results of my research will be made available to you upon your request. I would greatly appreciate any information you provide.

Sample Questions:

1. What are the factors that influence students' decisions to withdraw from the College?
2. Do you think that students' reasons are academic? Personal? Financial? Other?
3. Do you think that these decisions are influenced by the College itself? By the College staff or faculty?
4. Are there things that the College is doing to convince withdrawing students to stay?
5. Can the college do things to convince withdrawing students to stay?
6. Do you think that these students return to the College or another post-secondary institution?

Appendix G

Explanatory Project Statement and Interview Questions

Explanatory Project Statement and Interview Questions

My name is Dale Kirby and I am an intern in the Student Services Division at the College of the North Atlantic. I am a graduate student in Faculty of Education at Memorial University of Newfoundland. I am researching student attrition and retention at the College. For this purpose, I am interested in interviewing students who dropped out of the College during the Fall semester.

All of these interviews are confidential and no individual will be identified. This is entirely voluntary and no longer than 10 minutes in length. The results of my research will be made available to you upon your request. I would greatly appreciate any information you provide.

According to the College's records you withdrew from the program _____ in the Fall semester. Are you willing to do an short interview?

Sample Questions:

1. I'm interested in the reason or reasons why you decided to withdraw from the College in the fall. I'm going to list a number of reasons why students withdraw from college. After I read them to you I'd like you to tell me if any of these were the major reason why you decided to withdraw.

A. Personal - For example, you had health, marital, family, or emotional problems.

B. Academic - For example, you had too many courses, the course material too demanding, or you were unhappy with grades received.

C. Institutional - For example, you were dissatisfied with the course, with the college, with the college's regulations, with the college's class sizes or facilities, or with the staff

or instructors.

D. Financial - For example, your tuition was too high, you didn't get financial aid, or your financial aid was not enough to cover expenses.

E. Employment - For example, you got a job or your job at the time was too demanding for you to be a student.

F. Other reason.

2. Do you plan to return to the College or another post-secondary institution? If yes, do you plan to attend the College or another institution?