ADVANCED PLACEMENT PROGRAMS AND THE TRANSITION FROM SECONDARY TO POST-SECONDARY EDUCATION

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In Partial Fulfillment of the Requirements for

the Degree of Master of Education

by

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FACULTY OF EDUCATION

The undersigned certify that they have read, and recommended to the Senate for acceptance, a MASTER'S THESIS entitled:

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ADVANCED PLACEMENT PROGRAMS AND THE TRANSITION FROM SECONDARY TO POST-SECONDARY EDUCATION

Abstract

The transition from secondary education to post-secondary education is problematic for many students. Attrition rates at post-secondary institutions, with the attendant loss of human capital, continue to be a source of concern. This case study concerned the transition of students from secondary education to post-secondary education and was conducted during 2010 and 2011 in southwestern Manitoba. In particular, this transition was examined from the perspective of current university students who had taken Advanced Placement courses in high school.

Findings from the study shed light on aspects of the educational landscape that were influential to the participants during this period in their lives. In the process the findings reveal potential reasons for the high levels of attrition currently experienced. The findings suggest that the overwhelming majority of the participants experienced a successful transition to university. The participants felt that this was in large part due to the content of their AP courses, and also due to being exposed to challenges that were similar in nature to those they could expect at university. The dynamics of the learning environment at both levels of education were found to be instrumental in the development of the participants, both in a positive and a negative direction. In general the findings suggest that the pedagogical philosophies of the two levels of education are not consistent and the degree of articulation between the two levels of education is not sufficient to ensure a smooth transition. Recommendations for improving the articulation between the two levels of education are included. Changes on both sides of the transition appear to be necessary in order to reduce the difficulties that are currently experienced by students.
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The thesis attempted to give the students a voice and I would like to thank them for offering their time and support and for adding fuel to the fire. I hope that my words have treated them well.

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Introduction

This case study explores with a sample of current university students their perceptions of their journey through secondary and on into post-secondary education. These students had all taken Advanced Placement (AP) courses at high school. It was anticipated that the knowledge generated from this inquiry would provide valuable information in two main areas: feedback on AP courses and their impact on this transition, and exploration of the variables associated with learning environments that play a role in this transition. Firstly, with regard to AP courses in general, there is a paucity of studies of a qualitative nature and so the dimensions of the impact of AP courses have largely been unexplored. In the local context to this point, there has been some anecdotal evidence to suggest that graduates from the AP courses have found their experiences to be helpful, but no formal study has been conducted. Secondly, there is a concern surrounding the transition from secondary to post-secondary education. Current rates of attrition at post-secondary institutions would suggest that the degree of articulation between secondary and post-secondary education may need to be examined.

It was felt that feedback from the participants would be valuable to the high school from which the students had graduated, as well as to other high schools considering implementing AP programs. Secondly it was felt that the perceptions of the participants could provide valuable feedback for educational administrations on either side of the transition and could be used to inform current and future practices. Through rich description of this transition it was hoped that the study could stimulate discussion concerning changes that could be made to address the issue of attrition at universities, as well as provide direction for further avenues of useful research. To this end, the research employed a qualitative case study methodology, which involved a
purposefully selected group of twelve current university students. Each of the participants had taken AP courses at high school as well as regular stream courses.

This chapter begins by providing an overview of the context and background in which the study is situated. Following this orientation is the problem statement, the statement of purpose, and accompanying research questions. Also included in this chapter is discussion around the research approach, researcher’s assumptions, and researcher’s perspectives. The chapter concludes with a discussion of the proposed rationale and significance of this research study.

**Background and Context**

Evidence suggests that the transition from high school to university is not necessarily a smooth process for a lot of students. In the United States for example, approximately 35% of the students who enter post-secondary education leave without graduating (U.S. Department of Education, 2010, p. 5) and nearly 30% leave before their second year (U.S. Department of Education, 1998, p. iii). A similar pattern is evident in Canada, where 21% of students leave post-secondary institutions without graduating (Statistics Canada, 2008). Statistics from the University of Manitoba suggest that approximately one third of new students will experience academic difficulty in their first year, only 23% of students with 90%+ high school averages maintain their GPA in their first year, and from 16 to 17% of the “A” students (80%+) will be at-risk by the end of Year 1 (Blais, 2009). Overall the pattern seems to indicate that this is a difficult transition period.

By no means is this a North American phenomenon and neither is it recent in its origin. The global nature of the problem is illustrated by statistics from the Organisation for Economic Co-operation and Development (OECD), which suggest that the average incompletion rate for 19 OECD countries throughout the world is 31% (OECD, 2008). That this phenomenon is not
recent is illustrated in the work of Tinto, who is regarded as the leading researcher in the field of post-secondary education. Almost twenty years ago he noted that more than a quarter of students entering two year colleges and more than a quarter of students entering four year colleges in the United States left at the end of their first year (as cited in Braxton, Milem, & Shaw-Sullivan, 2000, p. 569).

The extent and persistence of this problem is cause for concern as there are recognised benefits of successful completion of post-secondary education for both the individual and for society (Shaienks, Gluszynski, & Bayard, 2008). Incompletion of post-secondary education may occur for a number of reasons and may not necessarily be an indicator of failure from the perspective of the individual student. These high dropout rates, however, should not be ignored in an age where educational levels are important to the prosperity of the country and the quality of life enjoyed by its citizens.

It is important that those who choose to engage in post-secondary education are successful since dropping out can have costs to both the individual and society. It is costly to the individual in a number of ways. In the first place, an unsuccessful journey into post-secondary education will result in a financial cost through lost tuition and other expenses. Secondly, the costs may also be felt as a result of reduced grades, which can prevent individuals from following their chosen career paths. This can also lead to a third or opportunity cost as a result of lost earnings. Finally, since the Government of Canada contributes significantly to support post-secondary education (28 billion dollars in 2005), dropping out and failing to graduate can be considered a loss of investment to the Canadian society as a whole.

Evidence suggests that the attrition at post-secondary institutions is not restricted to students with poorer high school graduation marks. Perhaps surprisingly, it is also attributable to
students with higher grades as well. Perry, Hladkyj, Pekrun, and Pelletier (2001, p. 587) refer to
the paradox of failure when talking about the unexpected failure of bright high school students
once they reach college. According to the Ottawa Citizen (2008), nearly a quarter of high school
graduates with “A” averages are at risk of leaving university after the first year. This number
doubles to more than half for students with poorer high school marks. These numbers suggest
that there is perhaps a gap between the skills of some high school graduates and the general skill
requirements of university. This gap is a contributing factor to the stresses that students
experience when they confront the reality of university. Unfortunately the gap proves to be too
large for some and they may have to drop courses and change programs. The end result is that
their career plans may be affected. Addressing the problem of successful transitions to post-
secondary education takes on greater significance in light of the fact that post-secondary
enrolment of Canadian youth continues to increase from 62% of the population in 1999 to 76%
in 2003 (Shaienks, Eisl-Culkin, & Bussière, 2006).

Academic preparation may not be the only issue. Many students used to enter university
close to the age of 20 but now that age is closer to 17. For example, Ontario no longer has Grade
13 at the high school level. Students of a younger age may not be emotionally prepared for the
stresses that they will encounter at university. The transition from the more structured
environment of high school to the autonomy of university leads to complications for some
students. In high school, course requirements were largely laid out, whereas at university there is
an uncertainty for many about what courses to take and what path to follow (Blais, 2009).
Evidence suggests that marks often drop, which can lead to insecurities about ability. Other
students have moved away from home to study and struggle with homesickness, loneliness, and
separation from cultural structures that are important in their everyday life. Add to this the personal stresses of growing into adulthood and it can become a minefield for some.

Within this context Advanced Placement courses have seen a rise in popularity in recent years. In the local context, at the same time that there were three streams of mathematics courses being offered in Grade 9 and Grade 10 at high school there was only one stream of science. This was felt to be contradiction and faculty were concerned about addressing the needs of the students who appeared to be able to accelerate their progress in mathematics, only to have it somewhat stalled in science. As a result of this discussion, the high school in the study introduced a selection of AP courses in 2005. Currently, students at that high school may select from the following courses: Biology, Calculus, Chemistry, English, History, and Physics. In the usual progression from high school to university the first graduates of this program could now be placed in their fourth or fifth year of post-secondary education.

**Problem Statement**

Research suggests that the transition from secondary to post-secondary education is difficult for many students. There are significant numbers of student who drop out, change majors, or don’t complete the journey. These events occur despite evidence to suggest that the students were prepared for university education according to standards set for secondary education, including Scholastic Aptitude Test (SAT) scores and acceptable grades from provincial high schools. At this point there is evidence to suggest that AP courses are of benefit in this transition. What appears to be missing in the research at this time is a detailed analysis of the dynamics of the learning landscapes involved in this transition.
Statement of Purpose and Research Questions

The purpose of this case study was to explore the transition from secondary to post-secondary education. Specifically, the journey was considered from the perspective of students who had taken Advanced Placement courses at high school and who had then gone on to university. The study attempted to look through the eyes of these students at factors that may have been instrumental to them in their transitional process. Experiences at high school and university were considered both from the perspective of changes in cognitive demand and also from the perspective of the social emotional development of the students. These two components of educational landscapes are recognised to be critical but they are often not recognised explicitly as part of the established curriculum (Clifton et al., 2004, p. 802). By illuminating this transition, it is hoped to shed some light on the possible causes for the difficulties currently experienced. In doing so, it is felt that the information could be used to address the needs of students involved in this transitional process.

The main research question used to shed light on this transitional process was, “What are the effects of participation in Advanced Placement courses taken during high school upon the subsequent experiences of students in first year university?” To explore this idea in detail, the following additional research questions were addressed.

1. Do the participants perceive benefits from having taken Advanced Placement courses, and if so, what benefits do they perceive?
2. On completion of their first year of university, how do the participants perceive that they had been prepared for the challenge of university?
3. What were the perceptions of the participants regarding the challenges involved in taking Advanced Placement courses?
4. What factors do the participants consider to have been important in their choice to take Advanced Placement courses?

5. When considering the journey through high school and on into university, what factors were considered to facilitate the process and what factors were considered to hinder the process?

Research Approach

With the approval of Brandon University Ethics Review Board, the researcher studied the experiences and perceptions of 15 university students, who had taken Advanced Placement courses while at high school. This investigation represented a case study using qualitative methods. In-depth interviews were the primary method of data collection. The interview process began with the researcher conducting three pilot interviews, which were used to shape the subsequent interviews. The information subsequently obtained through twelve individual interviews formed the basis for the overall findings of this study. Each interviewee was indentified with a pseudonym and all interviews were tape recorded and transcribed verbatim.

Although the nature of this study prevented the researcher from achieving triangulation of data, the research was supported by a comprehensive review of the relevant literature and a pilot study, both of which helped to shape and refine the method of data collection. The establishment and refinement of coding categories was an integral part of the study. This process involved numerous iterations which were shaped by, and in turn shaped, the developing conceptual framework of the study. In addition, various strategies were employed, including the search for discrepant evidence, checks of consistency in the coding process, and peer review at different stages as the study progressed. During the search for discrepant evidence, data saturation became apparent, which led to the particular sample size.
Assumptions

Based on the researcher’s experience and background as an Advanced Placement teacher at high school, three primary assumptions were made regarding this study. First, regular high school curriculum coursework may not adequately prepare high school students for university. This assumption is supported by the significant rates of attrition that are currently experienced. Second, lack of rigor in high school programs may contribute to unreasonable optimism about academic performance in graduating students, which leads to difficulties at university. Again this is supported by research that illustrates that student attrition is not just a phenomenon associated with lower marks, but affects all levels of ability. Third, students who are successful in AP courses at high school should experience a more successful transition to university. This assumption is not based purely on the abilities of the students, but is also based on the fact that AP courses are designed to resemble a first year university course. In the design of these courses, extended course content is provided beyond that of normal provincial curriculum. As well, there are significant academic challenges inherent in the courses which may be important in nurturing a more realistic appraisal of academic ability.

The Researcher

At the time of conducting this study, the researcher was a high school teacher of an Advanced Placement program. Prior to this he had been one of the team of administrators and teachers who had implemented a selection of AP courses in a high school in southwestern Manitoba. As a high school teacher with thirty years of experience in various settings, the researcher brings to the study extensive practical experience and observation of the events leading up to the graduation from high school. Through contact maintained with many former pupils, he has also built an extensive knowledge of post-secondary experiences.
The researcher acknowledges that the same experiences that are so valuable in providing insight could also serve as a liability, biasing judgment regarding research design and the interpretation of findings. In addition to his assumptions and theoretical orientation at the outset of the study the researcher remained committed to engage in ongoing critical self reflection by way of journaling and dialogue with professional colleagues and advisors. Moreover, to address the issue of subjectivity and strengthen the credibility of the research, various safeguards were taken such as independent checks with professional colleagues when coding transcripts and also during the interpretation and analysis phase of the research.

**Rationale and Significance**

The rationale for this study emanates from the desire to uncover ways to help more students make a successful transition to university. Increased understanding of the journey from high school to university may not only reduce the number of students who experience difficulty, but might also increase the potential for them to successfully follow their planned career path. Knowledge of this transitional process could be used by stakeholders to inform programs both at high school and university. Closing the gap between the skill level of graduating high school students and the skills required for university, along with modification of the first year university experience, may help to reduce the serious loss of human capital currently experienced.
Conceptualization

The purpose of this case research study was to explore the role of Advanced Placement courses in the transition from high school to university. Specifically, the role was considered from the perspective of students who had taken Advanced Placement courses at high school and who had then gone on to university. The study attempted to look through the eyes of these students at factors that may have been instrumental to them in their transitional process. As part of the study, a review of the extant literature was conducted. Three main areas of research were considered: (a) models of post-secondary education, (b) Advanced Placement courses, and (c) models of human development. Post-secondary education research was examined in order to illustrate the multivariate nature of these environments. Interactions between the students and the variables in these environments lead to behaviours that can have consequences in the development of the students. In this context, variables associated with student attrition and persistence were examined. A review of AP courses provided an understanding of where these courses fit in to the current landscape of high school education. Finally, models of human development were considered, as they provided a framework to consider the many factors involved in the period of transition from high school to university.

Literature Review

Post-secondary education. According to Tinto (2006), “...student retention is one of the most widely studied areas in higher education” (p. 1). The success of students at post-secondary institutions is not only of interest to the students, but also has major implications for the institutions themselves. Ultimately successful students enhance the reputation of the institutions and help ensure that the institutions generate consistent revenue. As well as fiscal stability, institutions also have an ethical responsibility to serve their population and ensure that their
students have the structures and supports that they need to succeed. The picture is not simple, however, and involves the interactions between numerous variables.

Of all the theories that have been proposed to explain student attrition at post-secondary institutions, Tinto’s “Student Integration Theory” enjoys near paradigmatic status (Braxton, Sullivan, & Johnson, 1997). Tinto (1975) adopted an ecological approach to the phenomenon of student attrition from post-secondary institutions. His primary thesis was based on Durkheim’s theory of suicide. Durkheim (1979) argued that individuals are more likely to commit suicide when they are insufficiently integrated into society. Tinto (1975) proposed that since post-secondary institutions were social systems with their own sets of values and social structures, dropping out of them resembled in nature the act of suicide or dropping out of a wider society. In his theory, student persistence is seen as an outcome of the connection between the student and his or her academic environment. This connection develops as a result of the interactions that occur between the student, his/her peers, and the faculty. Student entry or background characteristics are seen as important predictors. Tinto (1993) suggested that “improved pre-entry information aimed at the needs of future students can be an effective tool in reducing, over the long run, student departure from institutions of higher education” (p. 156). These pre entry characteristics include family background characteristics (e.g. socio economic status, parental educational level) individual attributes (e.g. academic ability, race, and gender) and previous academic achievement.

Critics of Tinto’s theory argue that it doesn’t recognise cultural variables, which makes it problematic when applied to minority students. Tinto asserted that students needed to break away from past associations and traditions in order to become integrated and assimilated into their new academic and social environment. Tierney (1992) argued that this was inappropriate
when applied to minority cultures, because it encouraged their separation from cultural traditions and supportive relationships. He suggested that post-secondary frameworks needed to be overhauled in order to “...move away from models of social integration and assimilation and toward a framework of emancipation and empowerment” (p. 616). Guiffrida (2006) echoed this sentiment when he stated that, “...minority students may have a different cultural background to that of the largely Eurocentric frameworks upon which the norms and values of predominantly white institutions are based” (p. 451). He proposed that cultural norms and motivational orientation needed to be integrated into Tinto’s model in order to make it appropriate for cultural minorities.

Bean (1980) also used the basic premise of connection between the student and the institution in his “Student Attrition Model”. In this model the attitudes of the student toward the institution are seen as important predictors for his/her persistence in his/her post-secondary studies. As with Tinto’s model, these attitudes are the result of the student’s social and academic experiences with the institution. “Social Cognitive Career Theory” (Lent, Brown, & Hackett, 1994) suggests that, in addition to academic ability and past performance, persistence is influenced by a student’s confidence in his or her academic ability (self-efficacy), the anticipated consequences of persisting (outcome expectations), and the determination to persist (performance goals). More recently Clifton, Perry, Adams-Stubbs, and Roberts (2004) examined two major aspects of the pedagogical environment experienced by students in a post-secondary environment. Cognitive demands of the institution and the social support provided by both the professors and other students were considered in the study. The study recommends that students be supported by the development of co-operative learning groups and also by helping professors to become more supportive and student-centred.
A more recent assertion by Tinto (1997) is that if social and academic integration is to occur at all in post-secondary institutions it must happen in the classroom. Surprisingly little research has been carried out with regard to this aspect of his model. Classrooms are seen as microcosms of the broader academic and social landscape of the institution. Interactions in the classroom become the gateway for subsequent student involvement in the larger social and academic communities of the institution as a whole. Engagement in the classroom is seen as critical, particularly for new students, and for those who are removed from their support structures.

The current study provides further input into Tinto’s model since it traces the path of students as they transition from high school to university. Pre-university characteristics of students who have taken AP courses are considered and can be compared to those found to be important predictors by Tinto. Interactions between the students and the institution are considered, as is the importance of the role of the classroom in the transitional process. As noted by Tinto (1997), “at its core, college is an educational experience and that conversations about persistence that ignore important questions of educational practice are conversations that are at best shallow” (p. 620).

**Advanced Placement courses.** The Advanced Placement (AP) program in which students in this study were engaged has been in existence since 1955 and is an instrument of the College Board. The College Board was founded in 1900 as a small non-profit association of elite colleges whose focus was the successful transition of students from high school to post-secondary education (Lacey, 2010). It was responsible for the creation and administration of the Scholastic Aptitude Test (SAT) in the 1920’s and more recently in the 1950’s assumed responsibility for administering (AP) courses and exams. At the time that it assumed
responsibility for the AP program, the political situation in the world gave rise to a general concern over the preparation of students for post-secondary education (Fund for the Advancement of Education [FAE], 1957; General Education in School and College [GESC], 1957). The FAE were concerned about the loss of a fundamental liberal arts education to the cafeteria style curriculum that was being adopted in high schools. Meanwhile the GESC saw as a real problem the “welding [of] the last two years in high school with the first two years in college” (as cited in Ballard, 1953, p. 498).

The AP program provides the opportunity for high school students to take college level courses (College Board, 2010a). All three universities in Manitoba encourage students who have taken AP courses to apply to their institutions. These students may be given consideration for the marks they have achieved. For example, the University of Manitoba states that students may be given credit for AP courses in which they score a 4 or higher on a five point scale, up to a maximum of eighteen credit hours of university credits (College Board, 2010b).

There is an ongoing discussion concerning AP courses with strong views held by both supporters and detractors. It is felt that there is a shortage of evidence about the efficacy, cost, and value of the programs (Sadler 2010a, p. 6) and consequently there is a lack of consensus over the efficacy of the courses and the program (National Research Council [NRC], 2002). Attempts to determine causal effects associated with AP courses prove to be difficult. One of the main reasons cited for this is that the courses act as a filter. The courses tend to attract motivated, high achieving students, who may succeed at the next stage in their education whether or not they have taken AP courses (Sadler 2010a, p. 7; Tai, Liu, Almarode, & Fan, 2010). As a result, it is difficult to isolate the determinants of their later success (Sadler 2010b).
Success could be as a result of taking an AP course or of particular student characteristics (Dougherty, Mellor, & Sterling, 2006), or it could be as a result of academic preparation in other areas (Sadler & Tai, 2007). The study “Factors Influencing College Science Success” [FICSS] conducted by Sadler and Tai (ibid) points to the importance of taking and passing the AP exam. The findings from their study suggest that students who had passed the AP exam with a score of three, four, or five, did better, on average, in introductory college courses than did their counterparts who had either failed the AP exam with a score of one or two or had chosen not to take the AP exam. These students also did better in all three subjects than students who had taken no high school course in the subject or only a regular course. Only in biology did they outperform students who had taken an honours course in the same subject. In physics and chemistry, the honours students outperformed at a comparable level with AP passers. This was a large national study involving students from fifty five randomly chosen colleges and universities, from small liberal arts colleges to large universities. Sadler and Tai (2007). recognise, however, that their study does not allow for causal connections between variables and outputs (p. 132). This limitation was recognised by Dougherty, Mellor, and Jian (2006) when they stated:

Much of those [AP] students’ later success in college may be due not to the AP classes themselves, but to the personal characteristics that led them to participate in the classes in the first place – better academic preparation, stronger motivation, better family advantages, and so on (p. 3).

Adelman (2006) found that the strongest predictor for completing a bachelor’s degree was the intensity and quality of the student’s high school curriculum, regardless of whether they had taken AP courses. In this regard, students involved in the FICSS study (Sadler & Sonnert, 2010) reported that the largest difference between AP courses and other courses was that they
worked much harder in AP courses. The greater demands were felt in preparation for the exam, writing lab reports, studying, and reading the textbook (p. 59).

Critics of AP courses point to the fact that the courses can lead to a reliance on rote memorization of facts with minimal emphasis on problem solving and discussion (NRC, 2002). A related criticism is that by teaching to the test, the experience fails to give depth and breadth of understanding (Berger, 2006; Katz, 2006). Support for this argument is suggested in a recent study conducted by the College Board, (Paek, Braun, Trapani, Ponte, & Powers, 2007). Three quarters of the teachers in the study felt a critical need to understand how to cover the course content in the time available and what content could be dropped or modified. The pressure to cover the required material in a given time is evident throughout the study as teachers appear to prefer strategies that helped them cover the material in the most efficient way (Paek, Braun, Ponte, Trapani, & Powers, 2010). Efficiency may not lead to activities that develop the depth and breadth of understanding that is felt by some critics to be lacking.

In response to the recommendations made by the National Research Council (2002) the College Board began a review of all their science courses. The intent was twofold: to respond to the concern over the depth of understanding and to strengthen the argument for the validity and reliability of the AP exam (Ewing, Huff, & Kaliski, 2010). To ensure consistency in course delivery, the College Board instituted course audits in 2007. These were required in order for a school to apply an “AP” designation to a course on the transcript of a student. The audit consisted of a detailed course description showing course content, materials used, and activities embedded in the course. In addition, the College Board began to redesign all four science courses built around a consensus of educators of what concepts, and practices should be included in a rigorous entry-level science course.
One of the participants in the current study stated that “there is a knowledge part and a people part” to education. Such a comment acknowledges the dichotomy between the cognitive and the affective domains that exist in educational discourse. Much of the research to date concerning AP programming deals with the cognitive domain and consequently looks at performance based criteria such as course retention rates and performance in post-secondary institutions (Sadler & Sonnert, 2010). In a recent study of AP teacher practices, the qualities used to measure teacher effectiveness were instructional and assessment practices, content coverage, and test preparation practices (Pack, Braun, Ponte, Trapani, & Powers, 2010). All of these characteristics appear to concern the cognitive domain or knowledge part of the equation. According to Olson (2003), it is difficult to pinpoint the specific characteristics of pedagogy that can be linked to high student achievement. What seems to be lacking in the research dialogue is consideration of the affective domain or the people part of education. Little attention is given to the role of the interaction between the instructor and the students. Motivation, connection, and integration of the students into the learning community are considered critical in Tinto’s model and recent research (Tinto, 1975; Tinto, 1997). Clifton, Perry, Adams Stubbs, and Roberts (2004, p. 803) consider the affective domain to be a critical component of the educational process. This study explores this critical component, thereby adding to the dialogue.

The search of the literature for this study found a paucity of studies that are qualitative in nature, or that were conducted from the students’ points of view. It was therefore the purpose of this study to acquire the perceptions of students who had successfully completed AP courses and were now enrolled in university programs to understand, from their perspective, how successful the AP courses have been at minimizing the challenges faced during the transition between high school and university.
**Models of human development.** The previous discussions of post-secondary education and AP programs reveal that there are many factors that may contribute to the successful transition of students from high school to post-secondary education. Tinto’s model of post-secondary integration appears to adopt an ecological perspective. Successful integration into a post-secondary landscape is seen as the result of the interaction between the students and their new environment. The discussion concerning AP points to the fact that showing causal relationships between the program and post-secondary success is difficult since there are so many variables at play. It is possible, that pre-existent conditions in the students would lead them to be successful whether or not they had chosen to take AP courses. As with many human endeavours, the transition from high school to post-secondary education is complex. This study attempts to position the student at the center of their interactional landscape.

A model that linked all of the elements of an individual’s landscape was proposed by Bronfenbrenner and provides one fundamental underpinning for the current study. He proposed in his “Bio-ecological Systems Theory” that it was the interaction between the child’s biological development, the immediate family/community environment, and the societal landscape that steered the child’s overall development (Bronfenbrenner, 1979). His ecological approach to the study of human development provides a model for studying subjects in a contextual, holistic fashion. Before him, psychologists, sociologists, educators, anthropologists, and other specialists in the social sciences each dissected the world of the child and studied a narrow piece (Brendtro, 2010).

Bronfenbrenner saw the individual as the central figure in a complex ecosystem that contained structures with which the child would have interactions. His model suggests concentric spheres of structures with the individual at the center. The sphere most immediate to
the child was considered to be the microsystem. This sphere contained the most powerful influences of family, school, peer group, and neighborhood connections such as work, church, youth clubs, and formal or informal mentoring. Interactions between elements of this sphere and the individual were considered by Bronfenbrenner to be reciprocal. For example, a child’s parents may affect the child’s beliefs and behaviors. Similarly, the child also affects the behaviors and beliefs of the parent. He proposed that a child’s behavior reflected the transactions within these immediate circles of influence. He felt that we could only gain an accurate understanding of a child by examining the transactions within the family, school, peer group, and neighborhood. Bronfenbrenner felt that ideally where these spheres intersected they should all work in harmony to provide protective support and instill solid values. In connection with this study, one can think of a parent handing their child off to a teacher at a school or university in the hope that individuals in those institutions will continue the work they have started with their child. If the picture is seamless and harmonious, then the child should develop in a positive fashion and should be able to successfully transition from one stage of their life to another.

The interactions between the structures within the microsystem and the interactions between the microsystem and other larger spheres are a key idea in his theory. Bronfenbrenner called this interactional landscape the mesosystem.

Beyond the immediate influences, Bronfenbrenner’s model proposed three more layers that situate the individual in a larger context. The first layer is the exosystem and defines the larger social system surrounding the child. Bronfenbrenner proposed that structures in this layer impact the child’s development by interacting with some structure in the child’s microsystem. The workplace of parents can provide a good example. We can visualize shift work as having an
impact on the development of the child as it creates an absent parent over a period of time. The stresses created by strike situations or job relocations would be other pertinent examples.

Outside of the exosystem is the macrosystem and can be considered the outermost layer in the child’s development. This is not a layer with specific structures as such but contains cultural values, customs, and laws. The effects of larger principles defined by the exosystem such as attitude towards education have a cascading influence throughout the interactions of all other layers. Finally, he proposed the chronosystem, which encompasses the dimension of time as it relates to a child’s environment. Here the elements can be internal, such as the physiological changes that occur within the child as they develop, or they may be external such as the untimely death of a parent or the separation of parents.

By providing a structure with which to consider all aspects of the child’s environment, Bronfenbrenner’s model supports attempts to determine in what ways the child’s continued development is helped or hindered by elements in their environment. Bronfenbrenner felt that the nature of these interactions was dynamic rather than static. He was critical of traditional psychological research and its tendency to study isolated behavior in artificial situations for a very short period of time. He felt that such research could provide statistically significant research of little use and relevance to practice. This study adopts an ecosystems approach as it attempts to look at the structures in the student’s ecosystem that could lead to successful transitions from high school to post-secondary education.

This ecological approach is also fundamental to the work of Bandura (1971). He sees human behaviour as being the product of a continuous reciprocal interaction between the triad of cognitive, behavioural, and environmental influences. In his “Social Cognitive Theory” Bandura (2000) sees the individual as not being passively shaped by their surrounding constructs but
rather he envisages an interactive reciprocal landscape where people are producers as well as products of their social setting. The cognitive component of his theory implies that individuals act in a conscious and purposeful manner to access and process information in order to construct an appropriate course of action for themselves. The function of this intentional behavior is to allow the individual to exercise control over the nature and quality of their life. This agentic behaviour is seen by Bandura as being at the heart of what it means to be human. He suggests that:

To make their way successfully through a complex world full of challenges and hazards, people have to make good judgments about their capabilities, anticipate the probable effects of different events and courses of action, size up socio-structural opportunities and constraints, and regulate their behavior accordingly. These belief systems are a working model of the world that enables people to achieve desired outcomes and avoid untoward ones (2000, p.3).

Bandura proposes three modes by which agency is achieved: direct personal agency, proxy agency, and collective agency. He believes that the most pervasive of these is personal agency or self-efficacy. This is the belief in one’s capabilities to effect some measure of control over the events in their lives. As students move through the landscape of high school and on into university, they are confronted with developmental challenges. A strong belief in one’s abilities to successfully navigate through these waters and produce desired results, while at the same time avoiding possible difficulties, provides people with the motivation to persevere when confronted with these challenges. Conversely, those that don’t feel the same sense of agency have little incentive to act or persevere.
Agency through proxy could be illustrated in an academic setting, where the teacher or professor can act on behalf of the student in a proxy role. By encouraging the student and expressing confidence in them the teacher can contribute to the sense of self-efficacy that is developing in the student. Striving to achieve a new skill requires a desire to master the skill and also the belief that the skill can be mastered. Our own expectations influence our behaviour but other people’s expectations of us can influence our behaviour as well (Bronfenbrenner & Boyd, 2008, p.139). The “Pygmalion Effect” implies that people will move toward an anticipated view of what they will become. In a learning situation, the expectations placed on students by teachers, peers, parents, culture can lead to a self-fulfilling prophetic result. If we have reasonable expectations of students and constantly convey the message that we expect them to do their best then there is a possibility that this will be achieved. Expectations are critical. In this regard we can see that interactions between teachers, professors, and students are crucial to the development of the self belief system of the student. By exploring the dimensions of the classroom in both the high school and university through the eyes of students it is hoped that the current study will reveal factors in these environments that are important in this regard.

Education is a human endeavour that takes place largely in a social setting. Bandura (2001) sees self-efficacy as developed in a social milieu as the third critical mode of agency. In studies of academic systems, it has been shown that:

- the stronger the perceived collective efficacy, the higher the group’s motivational investment in their undertaking, the stronger their staying power in the face of impediments and setbacks, the higher their morale and resilience to stressors and the greater the performance accomplishments (p. 14).
This statement summarizing research in the area indicates the importance of the interactions that take place in an academic setting, particularly in the classroom. Bandura sees collective efficacy as an emergent property of the group built on the shared knowledge and skills of the members of the group. He feels that the interactions of the group have a synergistic dynamic that promotes the self-efficacy of individuals in the group. Earley (1994) addressed the question of culture with regard to collective agency and found that perceived personal efficacy can contribute to the productive functioning of members of a collectivistic culture just as it contributes to the functioning of people raised in individualistic cultures. This has implications in Canada regarding the education of different cultural groups in both school and post-secondary settings. Given the importance of this dynamic it is perhaps surprising that it was missing from the initial model of post-secondary engagement and integration proposed by Tinto and was only added at a later date as a result of further research (Tinto, 1997). In addition, the synergistic potential of the group dynamic also seems to be missing in general from the research work conducted on AP programs. The current research attempts to address this important omission and is considered in the research design.

Managing and organising the many variables involved in the development of humans is difficult. Another useful model in this regard is that proposed by Benson, Scales, Leffert, and Roehlkepartain (1999) and also adopts an ecological perspective. Their work describes a set of assets that they feel are critical to the healthy development of children. These assets are described as “developmental”, and are separated broadly into internal and external clusters. This division reflects the bio-ecological nature of both Bronfenbrenner’s and Bandura’s theoretical constructs. The analysis of sources of support for the developing child by Benson et al. provides an example of their ecological perspective as it is considered from the perspective of the family,
Findings suggest that there is a direct correlation between the number of assets that a child has in their ecosystem and the success that they achieve at school, as defined by course completion and timely graduation. The converse is shown to be the case with a reduced amount of assets (Scales, Benson, Leffert, Blyth, & Dale, 2000). An interesting component of this work deals with the resilience of children in the face of adversity. Children who should find themselves at risk because of socio-economic conditions in their lives are found to benefit from a landscape rich in assets. Amongst this asset base, replacements might be found for gaps that potentially put the developing child at risk. An example might be a healthy male role model filling the gap left by a deceased father. The overriding premise of the work on developmental assets is that the entire community needs to invest in the raising of children. The components of the ecosystem need to be examined since it is the interactions between them and the individual that leads to healthy development.

Implicit in the discussion of human development to this point is the idea that human experience is set in a temporal framework. The model of Bronfenbrenner (1971) includes a time construct called the chronosystem and there is a strong temporal component to the construct of self-efficacy. Bandura (2000) suggested that people continuously evolve efficacy beliefs based on past experiences, current appraisals, and reflections on future options as they strive for control over their life circumstances. A recent model of how humans build time constructs has been proposed by Zimbardo and Boyd (1999; 2008). In their model of “Time Perspectives” they provide a framework to conceptualize this aspect of human development. It is their assertion that
our perspective on time is one of the most powerful influences on human decisions, and yet individuals are largely unaware of its role (2008, p.xiv). Although the way we construct our past experiences and our present actions, current research points to our future time perspectives as a critical concept when looking at student achievement and motivation and is considered here as an important underpinning of this study (Kauffman & Hurmann, 2004).

When individuals enter the school system they go from a relatively unstructured day to one of timetables and routine. As seen by Zimbardo and Boyd (2008), “the primary function of our educational system is the domestication of present-hedonistic children and transformation of them into future oriented adults ready to assume their place”...in society (p. 288). No one is born with a future time perspective. It is a learned concept and is essential for success in school. In order to be successful, “talent, intelligence, and ability are necessary, but they are not sufficient. Discipline, perseverance, and a sense of self-efficacy are also required (2008, 137). Data from studies using the “Zimbardo Time Perspective Inventory” suggest that these requirements are to be found in people that score highly in the future orientation dimension of the inventory (2008, p. 144). Zimbardo found that the highest grades in introductory psychology courses at Stanford University were earned by students who were the most future oriented. They almost never get incompletes or require extensions to complete their work. He refutes the argument that it may be that these people are smarter and instead proposes that people with this future orientation do “...appropriate planning, scheduling of time, and anticipating detours and traps that might appear on the path to success” (ibid, p. 147).

Developing the ability to delay gratification and turn away from instant forms of pleasure together with the positive beliefs for the future increase the likelihood of completing a task (Bembenutty & Karabenick, 2004). Miller and Brickman (2004) found that although an
envisioned future may be some years away for students, it has an impact in the present by encouraging them to develop proximal sub-goals. These sub-goals are reflected in a greater degree of engagement shown by the student. There is a sense of purpose that drives their behaviour. At this point it is suggested that more research needs to be conducted in this area, particularly with regard to the nature and genesis of these goals (Miller & Brickman, 2004; McInerney, 2004).

Motivation and achievement in educational systems seem to be automatic for some and elusive for others. Central to a student’s motivation is the connection between who they hope to become and the activities in which they are currently engaged (Kauffman & Hurmann, 2004; Vansteenkiste, Lens, & Lacante, 2004). If they perceive that the material they are learning has utility to their future aspirations it will have a positive effect on their motivation. From a multicultural perspective, the “Immigrant Optimism Hypothesis” suggests that a family investment in education is a way to achieve upward mobility in the distant future. Future goals are also seen as a protective factor in the face of frequent school failure. Perceived lack of future opportunities may weaken the motivational force of the future and lead to structural disadvantages in the education system (Phalet, Andriesson, & Lens, 2004). In addition to relevance, the activities must be at an appropriate level of challenge. Activities that are either too hard or too easy are not optimal for motivation (Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003). This connection between the motivation of students and their future aspirations is felt to be critical (Kauffman & Hurmann, 2004). Phalet et al (2004) see the lack of temporal components as a weakness of most models of motivation.

**Current brain research.** This research looks at the time period involving the last two years of high school and the first few years of post-secondary education. This is a critical period
in the development of individuals during which they are involved in the gradual transformation from adolescence to adulthood. As a necessary part of this gradual process individuals learn to deal with challenges that are physiological, biological, psychological, and social in nature. They are moving from “dependency to independence, autonomy, and maturity” (Geldard & Geldard, 2010, p. 4).

Recent research using Magnetic Resonance Imaging (MRI) has called into question some of the long held beliefs concerning this period of human development. The findings appear to have important ramifications with regard to the transition to post-secondary education and have particular relevance to this study. With new technologies come new findings. Prior to the advent of MRI technology, brain development was studied mostly by using cadavers, and much of the information concerning brain function was determined from studying brains that were in some way damaged. MRI heralded a fresh avenue of research, since it meant that it was possible to study healthy brains of all ages for the first time. Prior to MRI research it was widely held that the brain was largely a finished product by the time that the child had reached the age of 12. In psychological literature traced back to the work of psychologists such as Piaget (1948), it is believed at this age the child is developing their highest level of cognitive functioning as they transition from the confines of concrete thinking to being able to deal with ideas, concepts and abstractions (Geldard & Geldard, 2010, p. 7).

At the present time researchers are beginning to question this basic premise as it is apparent that the brain of the adolescent is far from mature. In fact, both gray matter and white matter undergo extensive structural changes well past puberty and currently researchers are suggesting that the framework of adolescence should be extended beyond the accepted teenage years until at least the mid-twenties (Wallis, 2008). Longitudinal studies of healthy teenage
brains indicate a drastic reshaping of our brains that continues until the early twenties. The importance of this is that this reshaping is occurring at the same time as the transition from secondary to post-secondary education. Rather than consider the individual as a finished product when they leave secondary school, the research suggests that they are very much still a work in progress. These changes in brain structure concern areas responsible for understanding the logical consequences of personal decisions and also indicate a growing co-ordination of cognitive capacity, both of which play key roles in continued success beyond secondary school.

This final reshaping and pruning of our brains affects the pre-frontal cortex, which has been called the “CEO” and is responsible for executive functions such as “planning, setting priorities, organizing thoughts, suppressing impulses, weighing the consequences of one's actions” (Wallis, 2008, p. 2). An irony here is that at the same time that the individual is striving for autonomy and independence, the physiological development of their brains suggests that they could be at risk in this endeavour as they may not be able to register the consequences of their behaviour. This has obvious ramifications for students as they enter post-secondary education where they may struggle with their new found autonomy. Being able to delay gratification and putting off what you want to do in favour of what you have to do is an executive decision function important to academic success. This current MRI research suggests that decisions such as this may be difficult for many individuals and points to a weakness in the assumption that individuals are ready for their post-secondary experience.

Further evidence of the weakness of the assumption that graduating high school students are ready for post-secondary education is suggested by research on another part of the brain, the cerebellum. This part of the brain is shown to be very susceptible to environmental influences and is the part of the brain that changes the most during the teen years. MRI shows that it
continues to develop well into the early twenties. Previously it was thought to be responsible for co-ordinated movement only. It has now been shown to be involved in the co-ordination of our cognitive processes as well. It appears that, just as lack of development in this area could lead to physical clumsiness, it could also lead to mental clumsiness (Spinks, 2002). While it is not directly related to cognitive functions the research suggests that it facilitates these tasks. As such, many of the complex academic and social tasks encountered by the adolescent in post-secondary education could be thought of as relying on the developing capacity of the cerebellum (Spinks, 2002). What this research seems to suggest is that during the early years of post-secondary education, there is still a significant amount of brain development occurring. It is possible that during this period of time of cognitive co-ordination that the individual may appear to become smarter and become more proficient at handling cognitive challenges. The first two years at post-secondary institutions are the danger years during which most attrition occurs. It is therefore intriguing to speculate that this current research evidence might point to a significant factor in this attrition. Certainly it lends support to the idea that we might need to rethink the design of the transition from secondary to post-secondary education if we are to reduce this loss of human capital.

**Conceptual Summary**

This review of the literature, together with the information contained in the preliminary study, along with the researcher’s own experience and insights contribute to the conceptual framework. This framework provides an organizational structure for the primary concepts related to the transition of AP students to university. It illustrates “the main things to be studied-the key factors, constructs or variables-and the presumed relationships among them (Miles & Huberman, 1994, p. 18).
The research on post-secondary education points to a number of key variables critical to the transitional process. Interactions between the student, their peers, and faculty are seen as critical to the integration of the student into their new environment. Research points to the idea that these interactions should be intentional and supportive rather than accidental. Knowledge of the antecedent characteristics of students is seen as being important in understanding the attrition at university. In this regard, family background, individual attributes, and previous academic ability are considered. Critical individual attributes are those involving self-efficacy and resilience. These characteristics promote and permit a future based orientation that is seen as being instrumental to success at university. At this point we can begin to see an interactive landscape where the intrinsic characteristics of the students intersect with extrinsic aspects of new learning environments. The complex interplay between these two sets of variables ultimately determines whether or not the individual will be able to successfully transition from the learning environment of high school to the learning environment of post-secondary institutions.

The research on the AP program also points to the antecedent characteristics of the students, but in a different light. Determining that there is a causal connection between AP courses and the successful preparation of students for their post-secondary experience proves difficult since it is difficult to control for the effect of antecedent characteristics. Other research points to the rigor of the secondary school experience as being a key indicator. The greater demands placed on the students at secondary school in areas such as preparation for exams, writing skills, and general studying and reading demands are implicated. In this body of research, the interactions between the students and the teacher seem to lack consideration. Major concerns regarding teacher efficacy have a cognitive aspect and concern such aspects as
efficiency in delivering the course material and performance based criteria. In the context of the conceptual framework of this study then, we can visualise the learning environment provided by the AP courses as being the crucible in which the students are challenged, and may be encouraged to develop skills and behaviours that could ultimately impact their transition to post-secondary education.

The research of human development underscores the importance of adopting an ecological perspective. Key to most models is the idea of interaction between the intrinsic factors of the individual and the extrinsic factors of their environment. Implicit in this interaction is the notion that it is reciprocal and that individuals are both products and producers of their social setting. In the context of this study we can visualise the individual as being both shaped by and shaping their learning environment. A critical outcome of these reciprocal interactions for the students is their development of a sense of agency or ability to exert some level of control over the future course of their lives. Interactions with peers and instructors are critical in this development as is the ability to master challenges as they occur. A future orientation appears to be a powerful motivational construct and enables students to make difficult choices as they navigate their way through learning environments. The ability to delay gratification in anticipation of future outcomes is an example. With this acknowledgment of these aspects of human development we have come full circle to the discussion on the successful integration into post-secondary education.

**Conceptual Framework**

Conceptually, AP courses are seen as providing a learning environment in which the students are given the opportunity to develop a skill set that may allow them to experience a smooth transition to post-secondary education. The development of the skill set is determined by
the interaction between constructs that are both intrinsic and extrinsic to the student. Intrinsic
constructs encompass cognitive, affective, and biological elements. The overriding construct,
however, is that of self-efficacy. Constructs that are extrinsic to the student include human
elements such as peers and teachers as well as those that pertain to the courses themselves. In
keeping with the idea that individuals are both products and producers of their social system, the
students are both shaped by and, in turn, shape the learning environment. In this way the AP
environment is seen as responding to the needs of the student. The effects of these interactions
can lead to improved levels of self-efficacy, which in turn should contribute to successful
transitions to post-secondary education.
Methodology

Introduction

The purpose of this case research study was to explore the role of AP courses in the transition from high school to university. The study explored this phenomenon as seen through the eyes of students who had been involved with these courses and who were now attending university. Through the perceptions of their experiences the study attempted to illuminate the factors that may have been instrumental to the students in their transitional process. My interest was to respond to the seemingly continuous and significant loss of human capital that occurs during the transition from high school to post-secondary education (Statistics Canada, 2008; Blais, 2009). My belief was that a richer detailed understanding of this process would enable educators on both sides of the transitional bridge to proceed from a more informed position when considering changes.

In order to better understand this phenomenon the study addressed five research questions: (a) Did the participants perceive that there were benefits from having taken AP courses and if so, what were these perceived benefits? (b) Did the participants feel that participation in AP courses had prepared them for the challenges of university? (c) What were the perceptions of the participants regarding the challenges of taking AP courses? (d) What factors did the participants consider to have been important in their choice to take AP courses? (e) When considering the journey through high school and on into university, what factors were considered to facilitate the journey and what factors were considered to hinder the journey?

This chapter describes the research methodology of the study and includes discussion of the following areas: (a) rationale for the chosen research approach, (b) description of the research sample, (c) summary of information needed, (d) overview of the research design, (e) methods of
data collection, (f) methods of analysis and synthesis of data, (g) ethical considerations, (h) enhancing quality and credibility of the research, and (i) potential limitations and strengths of the study. The chapter concludes with a brief summary.

**Rationale for Research Approach**

The theoretical underpinnings of this research are in social constructivism, or the notion that individuals construct their own reality. Each individual constructs their own reality as a result of their interactions with the world in which they live. In this way the individual experiences, interprets, and builds an individual understanding of their world in a particular context and at a particular point in time. The journey for students through high school and on into university was the particular context of this study and it was the students’ conceptualization of this journey that was at the heart of the study.

This research reflects a phenomenological perspective to human experience. As such it attempts to enter the subjective world of the individuals in question in an attempt to understand how and what meaning they construct from the interactions in their daily lives (Bogdan & Biklen, 1998). A phenomenological perspective is holistic rather than reductionist as in quantitative analysis. The holistic approach recognises that interactions between individual components in a phenomenological landscape can create new emergent properties. Implicit in this approach is an emphasis on discovery and description and the objectives are to extract and interpret the meaning of the discovered experiences (Bogdan & Biklen, 1998).

As well as there being a general paucity of studies concerning AP programming (Sadler et al., 2010), there is a general tendency towards adopting a quantitative stance. The trend appears to be to look for correlations between participation in AP courses and post-secondary performance criteria, such as grade point average and graduation rates. While proponents of the
programme look for support in these statistics, detractors point to the difficulty of determining causality since there are so many variables (Sadler et al., 2010). Controlling for these variables is difficult and so we are left with the possibility that while post-secondary success may be linked to participation in AP courses, it is just as likely that the success could be attributed to the characteristics of the students that motivated them to take the courses in the first place (Dougherty, et al., 2006).

Exploring the impact of involvement in AP courses then is limited using a quantitative stance and it was my contention that in order to elicit the rich data necessary to understand this phenomenon it was important to adopt a qualitative stance. There are vital intangibles such as self-efficacy that are critical to this transitional process and it has been argued that there are no acceptable, valid, and reliable instruments to measure this component (Patton, 2002). In my view the fundamental assumptions and underpinnings of qualitative research fit well with this study. Using a phenomenological approach I hoped to discover the meaning of the lived experience of the participants through an intensive description and analysis of the phenomenon. It was necessary for me to maintain a neutral position during this discovery process to allow the perceptual constructs of the participants to come to light in an organic way without the restriction of preconceived ideas. Case studies involve examining a contemporary phenomenon within its natural context using multiple sources of evidence in order to gain an in-depth understanding of the meaning of the phenomenon for those involved. Merriam (1998) indicates that the qualitative case study is an ideal design for understanding and interpreting educational phenomena. The present research fits well in this context because it sought to better understand the meaning that the participants had constructed for themselves concerning their participation in AP courses in high school.
The Research Sample

A purposeful sampling procedure was used to select the participants for the study. The logic of using purposeful sampling is so that information rich subjects can be selected to satisfy the emphasis on in-depth understanding inherent in the research design (Patton, 2002). In light of this, I sought to locate individuals who had taken AP courses and had then gone on to university. With permission from the high school at the center of this study, I obtained a list of students who had taken AP courses. A time frame was chosen that ensured the students had experienced at least a full year of university. For the pilot study, a random list was constructed and consisted of six females and six males. All twelve responded but some of the students were not available for the pilot project due to their geographic location. Those that had expressed an interest but were not included in the pilot study were contacted at a later point for the current study. A snowball sampling strategy (Patton, 2002) was also used to refer other students. My interests here were twofold: (a) I wanted to obtain more than a local perspective and so sought participants who had attended universities of different sizes and different geographical location and (b) I looked for negative case studies to ensure that the research considered all aspects of the phenomenon. In this way my work benefitted from being informed by the perspectives of multiple students. I reasoned that this would provide greater support for the findings.

The final criteria for the selection of the participants were:

1. A balance of female and male participants was to be established.
2. A variety of post-secondary institutions was to be established.
3. All participants had to have taken at least one AP course in high school.
4. All participants had to have completed the AP course, including the concluding exam.
As a result, the final participant sample included nine females and six males who were studying at a number of different post-secondary institutions of varied size and geographic location, both within and outside of the province of Manitoba.

**Summary of Information Needed**

This case study focused on twelve university students from four institutions located within Canada and the United States. In order to understand the role that participation in AP courses had played in their journey through high school and into university three research questions were explored. The information needed to answer these questions was determined by the conceptual framework and fell into two broad categories: perceptual, and theoretical. The information included:

1. Students’ perceptions of the preparation they had received for university as a result of taking AP courses.
2. Students’ perceptions of the rewards and challenges of taking AP courses.
3. Student’s perceptions of the factors that had facilitated or impeded their journey in this transitional process.
4. An ongoing review of the literature providing the theoretical background for this study. Two primary areas were considered: topics that were connected to the developing conceptual framework, and topics related to qualitative research methodologies.

**Overview of Research Design**

The following list summarizes the steps used to carry out this study.

1. Prior to conducting this study a pilot project was carried out. A selected review of the literature concerning post-secondary education, AP courses, and models of human
development was conducted. An ethics application was completed and three students were contacted and interviewed. The data were analyzed in three iterations and were used to explore the underlying structures of this phenomenon. This analysis, together with the ongoing literature review, led to the development of the conceptual framework used to frame the current study.

2. Following agreement of the proposal, I acquired approval from the ethics committee at Brandon University to proceed with the research. The ethics review procedure outlined all procedures and processes needed to ensure adherence to standards put forth for the study of human subjects, including participants’ confidentiality and informed consent. Potential research participants were contacted by mail, and those who agreed to participate were sent a copy of the research proposal, letter of consent, and the interview questionnaire protocol.

3. Semi-structured, in-depth interviews were conducted with fifteen university students and were recorded in their entirety. These interviews were carried out in person during the summer of 2011.

4. Interviews were transcribed verbatim and forwarded to the participants for member checking.

5. The transcripts were dissected and analysed according to coding schemes developed during the pilot project. This process occurred concurrently with the interviews. A constant checking and rechecking process occurred and any new emerging themes were considered in the light of the ongoing literature review and discussion with colleagues. Verification was sought in future interviews and past data.
**Literature Review**

An ongoing review of literature was conducted to inform this study. The literature review undertaken for the pilot project and findings from that study led to the identification of four main topics: post-secondary education, AP courses, human development, and factors affecting motivation. The focus of the research was to gain a better understanding of the factors that underline this transitional process in the lives of individuals. I felt that it was important to adopt an ecological perspective since the transitional process in question was multi-factorial in nature. Drawing upon the ecological nature of the work of Bronfenbrenner (1979), Bandura (1997), and Benson et al (1999), variables both intrinsic and extrinsic to the participants were considered. Further to this, a body of work related to qualitative methodologies was examined in order to position the study in the current research landscape.

**Data Collection Methods**

**Theoretical underpinning.** In this work I am proceeding from the position that our perceptions of reality are highly subjective. In allegorical terms, the maps we create of the landscapes of our lives are merely our own representation of that reality. As such they will include omissions and distortions of that reality and may not be representative of the realities of others. This understanding has two implications for the current study. The first implication is with regard to the lived experience of the participants. Even though each person creates a unique map, there are in fact common themes within the maps. The participants in this study all shared a set of common experiences insofar as they had all been involved in taking AP courses in the same high school and had then experienced the transition from a high school environment to that of university. Each of them would have a different perspective of these events, but through careful analysis, I held that the basic elements of this shared experience could be identified
(Patton, 2002; Bogdan & Biklen, 1998). The second implication is with regard to myself as the researcher. I recognise that consistent with the previous line of reasoning is the fact that, without any corroboration, the findings from this study are merely my own representation of the phenomenon in question. Throughout this study I have tried to remain cognisant of this and have strived to provide an honest representation of the phenomenon.

Phase I: Pilot project. The initial project was carried out in the fall of 2010, under the supervision of the Faculty of Education at the University of Manitoba. Based on a review of the literature surrounding the topic, my own background as a teacher, input from other teachers, and university faculty, a questionnaire was developed and administered to three individuals. Each interview was transcribed verbatim and returned to the participant for member checking. This was to ensure accuracy and allow the participants to make any clarifications that they felt were appropriate. Each interview was coded and analysed before proceeding to the next one.

During three iterations of this process I proposed a coding scheme and a conceptual framework based on the ongoing literature and personal experience. Feedback was sought from a number of sources such as parents, high school teachers, principals, counsellors, and students, as well as post-secondary faculty. Raw data was not used in the feedback process. Through the process of seeking multiple perspectives and maintaining an open stance to the findings, I was able to make refinements to the coding scheme and conceptual framework. These refinements were explored for verification in successive interviews. The final coding scheme and conceptual framework used in the current study, therefore, has benefitted from the input of a number of individuals with different perspectives on the phenomenon. By maintaining an open and reflexive stance I was able to consider alternatives to the developing structure underlying the shared experiences of the participants (Bogdan & Biklen, 2008).
Phase II: Interviews. The interview was selected as the primary method for data collection in this research (Bogdan & Biklen, 1998). The interview method was felt to be the most use in the study because it has the potential to elicit rich thick descriptions that could go beyond the limitations of responses obtained from quantitative instruments (Patton, 2002, p. 193). Further to this, it gave me the opportunity to clarify statements made by the participants and to probe for additional information in order to try and capture the participants’ perspectives. The benefits of interviews are tempered however by limitations inherent in their use. Rich description of an event is predicated on the ability of the participant to articulate ideas and requires skill from the interviewer to elicit the necessary information. At the same time as eliciting this information, however, I had to be cognisant of the language that I used in order not to shape the formation of ideas for the participants. Since editing the transcripts by the researcher could have introduced a source of research bias, the interviews were transcribed verbatim and were sent to the participants for them to check. This member check process also ensured that the participants had the chance to review what they had said and clarify any of their statements. This process was held to be important in order to support the trustworthiness of the findings.

Interview schedule of questions and pilot interviews. The study’s three research questions were used as a framework to develop interview questions for the pilot project. Findings from the pilot project together with an on-going review of the literature led to the development of a series of open-ended questions which enabled flexibility to allow new directions to emerge during the interview. The interviews conducted in the pilot project also gave direction to the probes that might be required to produce the rich description that was sought. The questions were reviewed by faculty and members of the ethics review board.
Revisions were incorporated into the final interview schedule. The final interview schedule is included as Appendix C.

**Interview process.** Contact was made with each of the individuals who had agreed to be part of the study. A letter of invitation was sent outlining the purpose of the study, a brief description of the interview process, and how the confidentiality of the participant would be handled. The participant selected a time that was mutually agreeable for the interview. Once this had been done, a copy of the interview instrument was sent to the participant in order for them to gather their thoughts, ask questions for clarification, and to provide for a more rich and thoughtful interview experience. The interviews took place during the summer of 2011 and were conducted in person. Prior to the start of their interview the letter of consent previously sent was reviewed and signed. Each interview was taped in its entirety according to the protocol and was later transcribed verbatim. Once this had been done, a copy of the transcript was sent to each participant for member checking. Finally, when the member checks had been completed, the interview transcripts were coded and used for further analysis.

**Methods for Data Analysis and Synthesis**

The challenge throughout the data collection and analysis was to make sense out of a large amount of data, reduce the volume of information, identify significant patterns, and construct a framework to organise the data. The formal process of data analysis began by assigning alphanumeric codes according to categories and descriptors of the initial conceptual framework. Using flip chart paper and wall space, the interview transcripts were dissected and placed on these sheets according to where they fitted into the developing conceptual framework. Prior to this process of dissection and analysis, all names of the participants were removed in
order to limit the potential bias inherent in participant identification. In this way the transcripts were coded without associating any of the material or data with any particular individual.

Coding was initiated based on the conceptual framework that had been developed and refined during the iterations of analysis that had been carried out during the pilot project. Since the pilot project was based on a small sample of three students, I believed that further development and refinement of the conceptual framework was possible based on the findings of a larger sample. In an attempt to ensure that coding schemes and categories were used consistently, colleagues were asked to code sample interviews. The prior removal of all identifiers ensured that confidentiality of the subjects was maintained. Areas of concern were discussed and reconciled within the context of the evolving conceptual framework. As well, various procedural safeguards were taken to address subjectivity and strengthen credibility of the research. In this regard, input from individuals with different perspectives on the transitional process was sought. This input was obtained from parents, teachers, principals, counsellors, and university instructors. Further refinements were made to the conceptual framework as a result of these inputs, new findings, and the ongoing literature review.

During analysis, the transcripts were dissected and rearranged into separate categories in order to develop the detail in each category. The ensuing process of synthesis involved piecing these fragments together to reconstruct an integrated explanation. Overall, the approach was to identify aspects of the transcripts that indicated emerging patterns and themes that described the landscape of the research topic. In this process three approaches were used to explore the depth and breadth of the findings. Initially each category was deep-drilled to examine and organise the threads within. In the second place, as themes emerged that spanned across the categories, they were explored in more detail and were delineated. The third layer of processing involved
reflecting the emerging structure contained in the research back against the findings of the ongoing literature review. In this way the current research was able to be positioned with respect to prior research. Although there were three strands to the synthesis process, they were not carried out in isolation from each other. Rather they were integrated into an iterative process throughout this phase.

As part of the process of data processing I kept a journal in which I recorded reflections concerning the developing structure. This process enabled me to pose questions about the implications of the research, which were used at a later stage in the formulation of conclusions and recommendations for future research, policy, and programming alternatives.

**Ethical Considerations**

In any research study, ethical issues relating to the protection of the participants are of paramount concern. Two ethical reviews were conducted for the current study. These reviews were conducted by the respective ethics review boards of the University of Manitoba and Brandon University. Although it was anticipated that no serious ethical threats were posed to any of the participants or their well-being, it was important to be cognisant of the concerns at all times and various safeguards were employed to ensure the protection and rights of the participants.

The central ethical consideration in the study was the protection of the rights of the participants. To this end, informed consent procedures were employed. Participants were provided with a detailed description of the processes that would be carried out during the study. They were given time to peruse the document so that they could ask questions and fully understand the process. Further to this, the participants were then required to sign a copy of the same document indicating their informed consent. The second consideration was respecting the
rights and interests of the participants when considering the reporting and dissemination of the data. In this regard, confidentiality of the participants was paramount. Random pseudonyms were used and any other possible identification characteristics of other individuals and organisations were removed as part of this commitment to confidentiality. Secure storage of the research-related records and data was maintained, and nobody other than the researcher had access to this material. Original data was only seen by the researcher and any assistance from colleagues during the data analysis phase involved data from which all identifiers had been removed.

Enhancing Quality and Credibility

Quality and credibility should be the aim of all research, whether it is quantitative or qualitative in nature. It could be argued that all research attempts to describe a “truth” that may exist in the world. Throughout the history of the search for truth, there are many examples where the search was limited by the technology available. Telescopes, microscopes, particle accelerators, DNA analysis, and electricity, have all been used at some point to replace an old truth with a new one. How much trust we put in these new truths very much depends on the quality and credibility of the research.

In the recent past, much was made over experiments which revealed that untold amounts of energy could be created from sea water by splitting the hydrogen from the oxygen (Fleischman & Pons, 1989). The biggest problem with this research was that no-one was able to replicate the experiment and consequently its credibility was dashed. In this case the new truth has not been accepted as it has not been confirmed. On the other hand people may be unwilling to accept a new truth because it goes against conventional wisdom. The fairly benign topic of stomach ulcers provides a good example. Prior to the work of Warren and Marshall in 1982, the
accepted truth concerning ulcers was that they did not have a microbial origin. Pharmaceutical backed scientists attempted to discredit the findings, only to be slaughtered when one of the discoverers, in a carefully constructed experiment, used himself as a guinea pig and successfully gave himself an ulcer by inoculating himself with the bacterium. Today, sales of ulcer medications have fallen away and most ulcers are now treated with antibiotics. For their work, the two scientists in question were awarded the Nobel Prize. In this case an old truth was replaced with a new truth.

The waters become murkier when we consider the possibility that truth is socially and individually constructed leading to multiple definitions of truth itself. That this is the case is shown by researchers actually defining what it is that they mean by truth. In his discussion of validity, Hammersley (1990) stated that when using the term validity, he in fact meant truth which he interpreted as, “the extent to which an account accurately represents the social phenomena to which it refers” (p. 57). We can also add another layer of complexity by considering that the language used to describe what is meant by truth is itself a social construct.

These examples illustrate the fluid nature of the concept of truth. Whether a new truth is rejected or accepted may speak to the quality and credibility of the research, but in large part speaks to the world views held by the audience. In this fluid environment I admitted to myself that my thoughts are as unique and idiosyncratic as others. I proceeded in this research by recognising myself as part of a socially constructed landscape, and I acknowledged the ambiguities that are a necessary part of living in this world of multiple realities. I tried to remain aware throughout the research that striving for the truth of the phenomenon may be difficult, but what I could strive for was to be honest in my research.
Traditionally, the concerns over quality and credibility of the research have been addressed through the notions of validity (the extent to which the research measured what it purported to measure) and reliability (the consistency with which it measured it over time). In other words, how much trust can we place in the research. Lincoln and Guba (1985) proposed that a new language and new concepts were appropriate when discussing the quality and credibility of qualitative research. They suggested a system that paralleled the one used in quantitative research. In their system, credibility, transferability, dependability, and confirmability become the qualitative equivalents to their quantitative counterparts of internal validity, external validity, reliability, and objectivity (pp. 76-77). More recently qualitative researchers have argued that this creation of a separate lexicon has not led to greater support for qualitative studies. Morse, Barrett, Mayan, Olson, and Spiers (2002) suggest that:

the terms reliability and validity remain pertinent in qualitative inquiry and should be maintained. We are concerned that introducing parallel terminology and criteria marginalizes qualitative inquiry from mainstream science and scientific legitimacy (para. 13).

The same group of researchers adopt the position that strategies for ensuring rigor must be built into the entire qualitative research process rather than attended to in a post-hoc analysis. They challenge the practice of post-hoc analysis and suggest that these processes have little to do with the actual attainment of reliability and validity. They argue that while a post-hoc discussion concerning trustworthiness may evaluate the rigor of the research, it is not sufficient to ensure rigor (Morse et al., 2002, p. 9). By building rigor into the entire process they argue that the researcher is required to correct both the direction of the analysis and the development of the study as necessary, thus ensuring reliability and validity of the completed project.
In recognising myself as a product of a socially constructed landscape and by determining that I wished to be honest in my portrayal of the phenomenon, I sought rigor throughout my study. I constantly challenged myself to look for, recognise, and attempt to control for potential biases that might be present throughout the design, implementation, and analysis of the study. In this iterative fashion of moving back and forth between the design of the research and its implementation I considered the congruence between question formulation, literature, recruitment, data collection strategies, and analysis in an attempt to ensure rigor.

Although I support the position of Morse et al (2002) and in consideration of my relative inexperience as a qualitative researcher I felt it was necessary for me to have a framework from which I could consider the rigor of my study. I chose to follow the language of Lincoln and Guba (1985) to ensure adherence to a recognised set of standards. In this context I considered the following topics: a) credibility, b) dependability, c) confirmability, and d) transferability.

**Credibility.** This criterion of credibility (or validity) poses the question of whether the findings are accurate and credible. In recognition of the socially constructed nature of experience this is considered from the standpoint of the researcher, the participants, and the reader. It is a key component of the research design, speaks to the honesty of the research, and entails a concern with all phases of the research including design, implementation, analysis and interpretation of the findings.

Assessing the credibility or validity of the design and implementation of the study involves looking at the congruence between aspects of the methodology of the study. This methodological aspect to validity involves consideration of the interrelationship between the research design components: the purpose of the study, the conceptual framework, the research questions, and the research methods. Assessing the credibility or validity of the analytical and
interpretive stages is somewhat dependent on methodological validity, but it goes further in that
directs attention to the quality and rigor with which the researcher interprets and analyzes data
in relation to the research design.

To enhance the methodological validity of the study, I adopted the position that
experience is socially constructed. I deliberately sought participants who could provide the rich
detail that I felt was necessary to describe the phenomenon. I felt it was necessary to obtain
varied perspectives and actively sought participants who had transitioned to different post-
secondary institutions. My concern in my sampling was that I could achieve a level of saturation
and replication of data that would give me a sense that most, if not all, aspects of the
phenomenon had been uncovered (Morse, 1991). I understood that more data did not necessarily
lead to more information and that one occurrence of the data was potentially as useful as many in
understanding the transitional process (Ritchie, Lewis, & Elam, 2003). I understood that my
concern was to describe the transitional process in a meaningful way rather than making
generalised hypothesis statements.

Beyond finding participants that simply verified my thinking, I actively sought examples
of experiences at multiple post-secondary institutions and also looked for negative cases, such
that I could attempt to understand aspects of the phenomenon that were initially less than
obvious. In the data gathering phase, I adopted an open stance from which I could respond to
new ideas suggested by the data collected and by the ongoing literature review. This enabled me
to probe for understanding of new concepts as they emerged. I proposed very open ended
questions to allow the participants to describe their own experiences without any preconceived
constructs in mind. Finally, since the language used by the participants is itself a personal
construct and subject to personal idiosyncracies, I reflected my understanding of the descriptions of the participants back to them to ensure that I had understood it as they saw it.

The challenge to attain validity was maintained in the interpretive stage of the study. Data was collected and analyzed concurrently ensuring an ongoing reflection between the discovered information and what I needed to know. This iterative process together with a responsive position ensured that new emergent elements could be verified in data already collected and reconfirmed in new data. Collaboration was sought from various stakeholders in the process. This was done not only to confirm my thinking but also to offer alternative interpretations to the data. Reviewing and discussing findings with professional colleagues was a further way of ensuring that the reality of the participants was adequately reflected in the findings. Altogether the analysis stage involved constantly checking and rechecking and moving back and forth between the micro detailed perspective of the data and the macro structure of the conceptual framework of the study. In this fashion an honest and comprehensive picture of the phenomenon was built.

**Dependability.** In the language of Lincoln and Guba (1985), reliability is repositioned as dependability. In the traditional sense, reliability refers to the extent that research findings from a particular study can be replicated by other similar studies. Sample sizes in qualitative research are often smaller than are required to provide a reasonable degree of statistical reliability. However, Crouch and McKenzie (2006) argue that qualitative research is concerned with meaning and not making generalised hypothesis statements and that analytic, inductive, exploratory studies are best done using small samples (p. 496). As argued by Lincoln and Guba (1985) the more important question becomes one of whether the findings are consistent and dependable with the data collected. In keeping with this concern, Hammersley (1992) saw
dependability as being, “the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions (p. 62). In research methodology this concept is referred to as inter-rater reliability.

With regard to this aspect of research in general, I sought to be consistent and transparent in the methodologies used. In recognising the dangers of completing the research from a purely personal perspective, I actively sought input from peers and challenged myself to maintain an active, open, and reflexive position, in order that the study might benefit from alternative perspectives. To this end, professional colleagues were asked to code several interviews. Although coding was generally found to be consistent, and in line with the position that experience is socially constructed, there were instances where others made different inferences. In these cases I engaged in discussion with those and other colleagues in an attempt to reconcile the differences in interpretations.

**Confirmability.** The concept of confirmability corresponds to the notion of objectivity in quantitative research. Although a noble quest, objectivity is elusive in all research. The hope is that the findings are the result of the research, rather than an outcome of the biases and subjectivity of the researcher. To this end I strived for transparency and honesty in my methodologies and representations of the collected data.

**Transferability.** The research design determined that generalizing to a larger population should not be seen as the intended goal of this study. Instead, by obtaining and honestly describing, in thick rich detail, both the perceptions of the participants, and the context in which the study took place, it was hoped that the findings could be considered worthwhile with regard to their transferability to similar but not identical situations.
Potential Limitations and Strengths of the Study

This study necessarily contains certain limiting conditions which I recognise. Some of these limitations are associated with the use of qualitative methodologies in general, others relate to this study in particular, and still others relate to the fundamental reality of being human. Limitations, however, do not imply that the research is invalid. It could be argued that all research has limitations and history reveals that findings that have enjoyed paradigmatic status at one time may later be overthrown by the findings gained from new improved technologies. In an attempt to address these issues I identified and addressed areas of possible concern.

Ultimately the structure of any research depends in large part on the personal constructs of the researcher, developed over time. Subjective involvement in research can lead to biases that have the potential to influence all aspects of the study from methodologies used to analytical choices. In this regard, I acknowledge that I have the potential to bring subjectivity and potential bias to this study, having participated in an AP program both as a curriculum developer and teacher. Throughout the study I remained committed to ongoing critical self reflection through journaling developing ideas and dialogue with professional colleagues and advisors. This process involved constant checking and re-checking of the data gathered against the developing structure of the research.

The same professional experience, however, has the potential to bring strength to the study. My experience as a high school teacher allowed me to proceed from an informed, practical, contextual position, rather than a theoretical position with little contextual support. In addition to my experiences as a high school teacher, I have a background and training in guidance and counselling. As such, I bring to the study a human development perspective and have considered this transition process from the perspective of both cognitive and affective
development. For those students involved in this transition from high school to post-secondary education, development in both the cognitive and affective domains is critical to their success. In a recent detailed analysis of the AP program (Sadler et al., 2010), there is a distinct absence of information concerning the importance of development in the affective domain. Instead the analysis deals specifically with academic indicators attributed to the cognitive domain, such as grade point average at post-secondary institutions.

Since I have been involved with the AP program in question from its inception, most of the participants were known to me. In some cases I had taught the students in an AP course, while in other cases I was known to the participants as a staff member. Because of this familiarity, I recognise that the responses of the participants may have been affected in their ability to be objective. In an attempt to co-operate with the researcher they may have offered responses that they judged to be helpful. On the other hand, it is possible that they might have responded to the familiarity by offering more guarded responses.

What is critical is that these possible limitations are recognised at all times and continuous efforts are made to minimize their impact. In recognition of this I took a number of measures. Initially it was important to acknowledge my position in this research and I endeavoured for transparency throughout. All aspects of collection, analysis, and synthesis of data were scrutinized by advisors and peers. To reduce the limitation of potential bias during data analysis, the names of all participants were removed and all interview transcripts were coded blindly so as to not associate any material or data with any particular individual. To address the problem of participant reactivity (Maxwell, 2005, p. 108), I continued to reflect on how, and in what ways, I might be influencing participants and made a conscious effort to create
an environment that was conducive to honest and open dialogue. My experience as an
interviewer and a counsellor, as well as prior research experience, was helpful in this regard.

A further limitation of this study was that the research sample was restricted. Therefore,
a critique of this research might be the limited possibility of generalizing this study to other
groups and programs. This is not a critique of this particular study but one that is levied at
qualitative research in general. The issue of transferability was addressed by obtaining thick,
rich description from the participants as well as details of the context in which the study was
conducted. By giving as detailed and honest a description as possible, it was the hope that the
knowledge presented could be adequately assessed and could lend support to its relevance in
other contexts. I recognise, however, that simply following a set of standards in no way ensures
that the research study is any more rigorous (Morse et al., 2006, p. 6). This responsibility lies
solely with the integrity of myself as the researcher and as such I have remained committed to
the goal of honesty throughout the study.

Finally with respect to the implementation of AP courses in a school setting, there is no
definitive model and not all schools adopt the same model. In Manitoba, articulating AP courses
with current provincial curricula, as well as creating an overall model for the implementation of
AP courses in high school, provides considerable challenge. An example is that the AP exams
occur in the early part of May. This early exam date provides challenges, since the expectations
of the regular provincial curriculum are not anticipated to have been met until the end of the
school year at the end of June. It should be noted then that the experiences of the participants
must be considered in the context of the model adopted in their high school. A more detailed
description of the model is included in the findings to provide contextual support.
Chapter Summary

This chapter provides a detailed summary of the study’s research methodology. Operating from a constructivist stance, qualitative case study methodology was employed to illustrate the phenomenon of whether participation in AP programs at high school allowed for a smooth transition to post-secondary education. The participant sample was made up of fifteen purposefully selected individuals. Individual interviews were conducted in person. The data were reviewed against literature as well as emerging themes. Honest description and integrity in methodologies were striven for continuously in order to minimize the inherent bias that unique individual experience brought to the study.

A review of the literature was conducted to devise a conceptual framework to support the design and analysis of the study. Through iterations of data analysis, involving micro analysis of emerging themes and macro analysis of their connection to the conceptual framework, key elements from the findings were identified. Through a comparison with the literature, interpretations and conclusions were drawn, and recommendations were offered for both educational practice and further research. The intent was that this study would make a contribution to the understanding of the transitional process involving high school and post-secondary institutions. Additionally it was hoped that this study would be of value to those educators and program administrators involved on both sides of this transitional process.
Findings

The purpose of this case research study was to explore the role of AP courses in the transition of students from secondary to post-secondary education. The study explored this phenomenon as seen through the eyes of students who had been involved with these courses and who were now attending university. Through the perceptions of their experiences the study attempted to illuminate the factors that may have been instrumental to the students in their transitional process. On one side of the transition process is the concern over the preparation of high school students for university, while on the other side of the process there is the concern over attrition and retention of students at university. Currently there is a large loss of human capital during this transitional process and the belief was that a richer, detailed understanding of this transitional process would inform educators on both sides of the transitional bridge. In this way it was hoped that the findings would enable them to proceed from a more informed position when considering changes to current models that could encourage more successful transitions to post-secondary institutions. This chapter presents the key findings obtained from fifteen in-depth interviews with current university students. Eight major findings emerged from this study:

1. The overwhelming majority of the participants indicated that they had experienced a smooth transition to university.
2. The primary reasons for this smooth transition were: familiarity with the course material, developed study habits, and developed self-efficacy.
3. All of the participants were looking for a more challenging environment when they chose to take AP courses.
4. There is a general performance recalibration required by students to make the transition from high school to university. For the participants in this study, this
recalibration appears to have taken place at high school as a result of their AP experiences, rather than at university.

5. All of the participants found being in a community where learning was valued to be a strong motivational force.

6. The overall majority of the participants had a strong future orientation which appears to have been beneficial to the participants in terms of motivation.

7. Most of the participants felt that the sense of community they had experienced in high school was lost upon entry to university.

8. The efficacy of the instructor was seen as being critical in creating learning environments that were beneficial to the participants. In this regard, pedagogical practices were seen as either helpful or a hindrance.

The following discussion provides details that support and explain each finding. The discussion attempts to embody the notion that although human experiences are unique, they do contain common threads. The broad range of experiences of the participants is documented by way of detailed description using the words of the participants themselves. In this fashion, the reader is provided with an opportunity to enter the world of the participants and better understand this phenomenon from their perspective. Illustrative quotations taken from the interview transcripts attempt to portray multiple participant perspectives and capture some of the richness and complexity of the subject matter. To protect the identity of the participants, pseudonyms have been assigned and used consistently throughout.

The Transition to Post-Secondary Education

Introduction. The major finding of this study is that the overwhelming majority of the participants felt that the preparation they had received in their AP courses had allowed them to
experience a smooth transition to post-secondary education. Reflecting on the prospect of entering university without having taken AP courses prompted Linda to say: “I give kudos to students that could have pulled that off. I think I would have got by, but having AP was just wonderful and it would have been a very stressful year without it.” There is a sentiment of gratitude in this statement which is also shown by Beth when she recalled her first year at university: “at the time I remember being very, very thankful that I did AP programming and it made that first year a whole lot easier,” and John, who said about his first year at university:

(It was)...easier than I thought it would be because I had this preparation in AP. It just taxes you so much. That first year in university I did great and I ascribe most of that to AP. When it came to university I felt I was ready. It didn’t feel like a bad transition at all.

The transition to university can be an abrupt wrench for some while at the same time being a smooth process for others. In the following reflection, April gave some sense of how the AP experience had allowed her to make a smooth transition.

The thing I loved about it now that I can reflect on it going to university, was that it is a perfect transition, because you know in high school your teachers pretty much hold your hand, but with AP your teachers are still pushing you and bugging you about your assignments and studying and they will kind of grill you on it and then you go to university and the university doesn’t care. Like your professor really doesn’t. (In AP) you still had that independence where you had to do it yourself, but you still had your teacher supporting you. You could talk to them. It made the transition much easier. The thing is though I really missed that when I first went to university. I couldn’t talk to my professor. I couldn’t discuss anything. So that is something that I really missed and that
was also a shock, but it wasn’t so much of a transition as it would have been if I had
gone from having my teacher’s hand holding to my profs ignoring me.

April referred to the abrupt change that could have occurred if she had gone to university from a
typical nurturing high school experience. She seemed to see the development of the
independence required for university while still being in a nurturing AP environment as being at
the heart of her successful transition.

Some of the participants talked about the utility of the AP experience in their preparation
for university. Ed said: “(It) is a very useful tool to have. It really does make a difference. I
would encourage anyone who has a glimmer of seriousness in them to try it.” In a similar vein,
Alan felt that, “if you know you are going to university, really it is the only option, because it
will prepare you so much and help you out so much.” According to David, “It was the best
decision I made, because it made me ready for what I am doing now and gave me the confidence.
It was the best!” These comments seem to offer an endorsement of the AP experience in
preparing the students for university.

**Uncertainty about university.** All of the comments of the participants were based on
their experiences after they have finished at least one year of post-secondary education. From
this reflective position, it appeared as if the transitions were largely successful. Nevertheless,
before the transition, most of the participants were anxious. Leaving the safe and familiar
environment of high school to enter university can lead to anxious moments. Rachel compared
the transition from regular stream courses to AP courses in high school with the transition from
high school to university. She recalled being recalled initially overwhelmed by the university
experience.
It was a much more new environment than going from regular classes to AP classes in high school, because you are surrounded by a lot more people and a new style of teaching with the professor as opposed to a high school teacher.

Ed recalled that he was nervous because the stakes were higher. In his words, he was:

...a little more nervous than in high school because I thought university is really where it counts. You are trying to earn your degree and what you are going to be doing with the rest of your life is going to depend on your performance in university.

Feelings of uncertainty are not unusual when one encounters a new environment.

Uncertainty about their new learning environment appeared to dissipate for the participants as they began to engage with the new course material. Trish recalled that she was a little nervous. She said:

I wasn’t too sure what to expect until you actually get into it. I didn’t have any thoughts about whether I was going to be able to do it. It was just how hard it was going to be. I had a period where I went back to the person I was when I first went into AP, but it is back now to where it was when I graduated. I was definitely nervous the first few weeks, but once we got more into the course material and we started actually going through things I started to realise it was a review of stuff we had done in AP, and that helped definitely relax me more and made me feel more confident in how I might do in these courses.

In summary, a period of anxiety appeared to be experienced by the students as they entered the new environment. This was replaced by a sense of calm as time progressed and finally, upon reflection about their transitional period at university, there was a general feeling that the AP experience was most beneficial.
At this point the discussion will examine the three primary reasons that appeared to be instrumental in making a smooth transition: familiarity with course material, study habits, and personal belief systems. The first two of these were indicated by David in his reflection on the value of AP preparation. He felt that it was:

the course material plus the habits. I’d say the habits are more important. It’s more the habits that you are going to develop in those courses than the actual material itself. If you end up going into the courses (at university) that you took (in AP) then that is wonderful. Then you have the best of both worlds, but the habits are the most important.

In addition to familiarity with the course material and personal study habits, a third benefit of AP programming appeared to be the development of an inner strength and confidence gained through the AP experience.

**Familiarity with course material.** One of the main reasons for the smooth transition appeared to be that, for the most part, the participants felt they had already been exposed to the content and assessment style that they encountered at university. All of the participants felt that the prior knowledge gained from their AP courses was instrumental in facilitating a smooth transition. In this regard, many of the participants expressed the value of their AP notes in the transition. Trish said: “Yeah I still have all my AP notes, which are still relevant, both first and second semester”. Paula echoed this when she said: “I used my AP notes a lot, and I still do. Like for MCAT prep and when I tutor high school students, I still refer back to my AP notes.”

This prior knowledge of their courses appeared to provide a level of comfort in the face of many new challenges. Paula recalled: “It is comforting that you know this material and now you are in university and are doing okay.” Susan found the same comfort. She recalled:
The funny thing is that I think it was the classes that comforted me the most during my first weeks of university, because everything was new to me. But the classes, like the content the teachers were talking about, I was totally okay with it, because I had covered it before and I didn’t have to worry about it and I could worry about other things. I was sitting in class and the teacher would be like talking about something and I would be like I learned that already.

In addition to the comfortable feeling of having seen the material before, most of the participants felt that this prior knowledge made things easier for them. David recalled: “I thought it was really quite easy because I had done it all before, for the most part.” Other participants expressed the same sentiment:

First year was a cake walk. There was no way in first year chemistry that I would have done anywhere near as well if I hadn’t done AP Chemistry. I think in terms of chemistry, it was almost based purely on AP material, but there was other material that you went into at university. It definitely helped having seen the material before. (Alan)

The following participant talks about the idea that their prior knowledge allowed them to achieve a balance in their studying while dealing with the large amount material that they were encountering.

Having a basis on the content definitely allowed you to be more efficient in your studying. Basically it allowed you to know what you knew and what you didn’t or what you had some doubts on. Just being able to study is one thing that is really useful from AP. (Brian)

In a few instances, having prior knowledge appeared to have two potential negative consequences. In the first place, some participants talked of the possibility of becoming bored
since they had seen the material before. When asked about the benefit of having taken the material before, Ed recalled: “I took it the wrong way in chemistry, because I told myself that I didn’t have to worry about it. Then I realised that if I had heard of it before, then it was a good review.” It seemed that for Ed the prior knowledge created a complacency that was not helpful. Since the university course could be substantially a review of material taken in an AP course, there was the possibility that boredom could be a consequence. Rachel said:

It was a little bit boring at times because you are sitting there and you have already seen this material before. You know all the basic facts. I thought it would be more material than what we covered in AP but it turned out that for biology, for example, it was all the same.

Balanced against the fact that the review could prove to be boring for some, it could also prove to be beneficial to others. Beth described the benefit of the review in this way:

It is really nice to learn things the second time in college. You’ve learned university level biology in high school and then you cover it again and you have a whole new understanding of it. It is so much easier.

The second negative consequence could be encountered if the participant elected to skip the university course, take the credit, and gain advanced standing. A few students opted to take the university credit in certain courses to advance their standing and in the process they would have missed this review. Colin recalled: “I didn’t actually take Calculus 1 (at university). I took my AP credit as an A and then took Calculus 2. I should have taken Calculus 1 as a recap!” In this case, it appears that the potential for boredom may not be as disadvantageous as missing the opportunity for a good review of material.
**Study habits.** The development and possession of a good set of study habits also appeared to be critical to successful transitions. All of the participants pointed to the importance of this aspect. Alan reflected that AP courses weren’t just about content. He said: “It’s developing more your habits that you get into. I mean course material is a big thing...but developing habits and the mindset that I want to do this is also important.” Brian expressed his understanding of the importance of study skills in the following way: “By the second year for sure I was definitely very thankful for the fact that I knew how to study as compared to other students that I saw.” The combination of prior knowledge, developed study skills, and personal habits appeared to provide a solid platform on which to begin university. Mary and Carol reflected on this in the following manner:

> Seriously, the first year of university I basically didn’t have to study because I knew the material already and I actually thought university was so much easier than AP courses. I think the AP course really just taught me how to study, taught me how to organise myself, and then when the time came to call upon these qualities I had them all and I was able to do it at University, whereas everyone else who hadn’t had this course they were struggling so much. (Mary)

> The stuff I learned in AP applies to all my classes. Even the stuff I haven’t taken before, there’s a general knowledge I learned in AP or skills I learned in AP and I can apply it to those classes. (Carol)

As a general skill, time management was considered by almost all of the participants to be one of the most important. In the face of a battery of new courses, each with a lot of information, it was helpful to know how to manage one’s time. Concerning time management, participants said:
Other students are learning to study with a heavier course load too. At least with high
school I had my AP courses and I had other courses where, I don’t want to say, but they
are slacker courses, and I kind of breezed my way through them and could focus more on
my AP courses, whereas in university you kind of need to focus on all your courses. You
had to allot a certain amount of time for each. AP helped me in that as well because I had
to schedule out my study time and in university I had to do that too. (Trish)
I think if I hadn’t taken AP I wouldn’t know how to balance out my life. I would be the
person in the library studying 24/7; no social life for sure. I don’t think I would have
much confidence if I hadn’t taken AP. As a person it definitely helped me. (Trish)
David reflected that it was not until his participation in AP courses that he actually
learned to study.
I started to learn to study (in AP courses) and that was important. It was a process I am
still getting better at, but I am a lot better than I was say in Grade 10. (AP) gave me a
two year head start on learning how to study.
Meanwhile only two participants indicated that they had not learned very good study
skills during high school. David stated: “Yeah I didn’t know how to study at all. This year I am
going to look into it a bit better. There are actually things on campus that will teach you how
and I did not know that last year.” In this case it appeared that the capacity or skill to ask for
help had not been developed. David elaborated on this:
Well I wasn’t big into going for help in high school. It was a pride issue that I had to get
over and I got over it by the time I was in second year here and now I am willing to go
and talk to professors all the time.
David was not alone in this as is evident from what Beth had to say.
I think the best thing I have learned in college is to go for help and what AP taught me is that I am no longer too proud to ask for help. The biggest lesson they should teach people is not to be too proud to ask for help!

The primary skills mentioned by the participants as being helpful included writing skills, test taking skills, and lab skills. All were seen as important. The participants talked about these in the following ways:

**Writing skills.**

After thirty minute essays in English you can go and write whatever. I can write things much faster than other people at university. (Carol)

The writing that I did in AP was probably the reason why I passed my first couple of (physics labs). I had a professor who doesn’t like things going on too much. I was glad I knew that skill before I started doing those. (David)

**Test taking skills.**

I have gotten really good at multiple choice questions. First year classes are all multiple choice. It’s (a large provincial university) right. Like there are five hundred students in your class and (they) don’t have time to mark everyone’s long answers, so everybody has multiple choice questions and I did a lot of multiple choice in high school. Like I was really good at multiple choice. (Susan)

**Lab skills.**

Well we did some pretty tough labs (in AP) so it raises your confidence...our (university) labs were easier because we did labs in high school that were essentially first year university labs. (David)
That’s another thing with AP. The lab part of it really helped, because some people come into university having no lab experience at all. With AP we actually got exposure to that and so we kind of knew what we were doing. (Trish)

**Self-efficacy and resilience from past experience.** Almost all of the participants expressed an inner resolve which allowed them to handle the challenges that they encountered at university. Often these challenges at university came in the form of tests and exams as well as the new learning environments. Experiences gained in high school appeared to be beneficial. Knowing that they had already prepared for, and successfully navigated, difficult AP tests seemed to provide comfort to the participants their new environment.

I gained confidence going into tests, because the first time you walk into AP tests it is something completely different. By the time you are out of them they aren’t that bad. By the time you have done three or four of them they don’t feel too bad and you’ll never write a more intense test in university, I found. You will write hard tests but you will always have the confidence going into them. (David)

Come mid-terms and finals it’s definitely helpful. In my first year I had three finals on the same day, so being able to study and manage your time is valuable. (Brian)

In Susan’s case, adversity came in the form of marks that were less than she expected. This was not an isolated instance as most students appeared to face the challenge of receiving marks that were less than they had been used to getting in high school. Paula recalled: “...you do see those kids that get fifty per cent on the exam and they are gone out of university, because it is devastating when you get these marks!” Ed expressed his feeling of confidence about tests when he said: “I could see a lot of nervous people but I was a lot more relaxed, because I could say I had been exposed to the material before, and I could handle it.” Again the experience gained in
AP appears to have prepared them for this challenge. David expressed it this way: “...and even though there are still some courses here that destroy everybody, they don’t destroy me as bad as they destroy other people.” Other recollections elaborated on this picture:

You know what? My little brother went through that this year. Here (at university) he got sixty percents. Like he had gotten “A” pluses in everything in high school and this just shocked him! It shook me up in high school in AP when I would get those marks, but I was more prepared in university, which is another benefit of the (AP) programme. You know, I would see other students go home in tears here at university over these marks. Like it is disappointing, but that is part of university to see if you can bounce back and keep going. (Paula)

Usually I will just work through it (low marks) and I think that is what comes from AP. I remember getting 75’s in AP and I would be like, “Okay what did I do wrong?” and then I would try and fix it and try again. (Colin)

Unanticipated events at university such as faculty strikes add additional stress to the students. Here again, a strong inner resolve developed through the AP experience was beneficial. Alan recalled the unpleasant feelings he had after a strike during his time at university:

...losing three weeks and then having all the professors the day after the strike saying, “Okay we lost three weeks and now we have to make everything up!” and you are sitting there saying, “I don’t want to be here!” but you know you can do it because you’ve done so much in the past that you know you can do this. (Alan)

In regard to how the participants felt about the various challenges, there was a unanimous agreement on the benefit of their AP experiences. Rachel expressed that: “AP has made me
more comfortable about aiming higher. I don’t know if I would have chosen dentistry if I hadn’t taken AP. It has definitely made me more confident that I can handle whatever comes next.” Ed said: “Like when you are going from a small class size to a large university class it definitely helps if you are feeling like you can already handle the course work and you know what is expected.” These sentiments were echoed by the following participant as she reflected on her AP preparation:

I am so happy. I really am. You have no idea. I honestly feel confident about what I can do. I don’t feel scared about it. I really don’t. I really feel well prepared. I didn’t get that slap in the face (at university). I got it in AP, but I am done with it. AP was free and my GPA is not going to kill me. (April)

April’s statements indicate another dimension to this set of findings. Inherent in her reflection is the notion that life lessons learned at university can be expensive in two ways; in monetary terms as well as in terms of the impact on the student’s grade point average (GPA). She went on to provide a particular example of this cost when she said:

I was talking to someone else and his first year was terrible. Like he almost landed up on academic probation, but he realised what he had to do and he was a smart kid and in the following years he ended up getting high marks but he was rejected for law school because his GPA was damaged. This is his second year of applying and I don’t know if he got in. It is sad.

Ed seemed to confirm what April felt when he reflected on what he saw as the value of his AP experience.

I think I would still be at university but I wouldn’t be philosophically as developed and my GPA would be down a bit. I would just be a year or two behind in terms of growth.
and development. You get the learning experience. Like this is what a university course is going to look like. It is still going to be tougher because of the pace, but you get some idea of what is coming at you. Why would you pay money for that and also pay in terms of your GPA. (Ed)

Throughout the discussion so far we can see that some of the feedback that the participants received was based on their own experiences. We can also sense another source of feedback, which was based on the observations of the participants of how well others were doing. Confirmation of their own preparation was obtained partly by discussion with, and observation of other students. The following section details these findings.

**The transitions of others.** At the same time that the participants were experiencing a smooth transition, it was apparent to them that others weren’t. In connection with other students who had not had AP, Beth said: “they generally seemed unprepared for (university) life, at least the work anyway.” Comparisons made by other participants pointed in the same direction:

I think a lot of them don’t know how to study. A few of them that I talked to, they just didn’t know how to study. Like they would just read the textbook or something and you can’t just do that. There are other things you need to do as well. (Trish)

I don’t think they were (ready for university). I don’t know what they thought, but I think high school and university are completely different. You have to change everything about yourself if you want to do well. Like, studying is completely different and I think if you didn’t take AP you would be completely lost. (Susan)

Lab skills have already been mentioned as being important. Deficits in these lab skills were observed by the participants and were felt to be the biggest struggle for a lot of students. Some of their observations included:
The class numbers dropped within the first few weeks. I think the biggest struggle was the lab component. For a lot of classes you need to be prepared before you come to lab and you are on your own. I think that was a big shock for most students. (Linda)

AP Chemistry helped a lot with my knowledge of how to use equipment. There were students that came from smaller schools and one person set up their burette upside down and couldn’t figure it out. (April)

Simply taking an AP science course, however, did not appear to guarantee adequate lab skills. Participants observed other AP students who also seemed to be lacking lab skills. April reflected on this:

There were actually a couple of students who had done AP but who had had no lab experience and they were completely lost. Like one AP student had done no labs. So (their AP course) wasn’t properly executed...and they actually didn’t have any of the equipment. She ended up not understanding that cooling a thermometer makes it brittle and she ended up breaking it because of a lack of experience.

One of the most common observations of the participants was that, while they were wary of what was to come at university, they saw many students who had great optimism. This sense of confidence was based upon high school experiences and appears to have been problematic as indicated in the following sequence of reflections.

Yeah they were just super happy and confident going into it and the AP students knew what they were in for. Like, they didn’t start off the year partying all the time! (April)

Yes they would strut right in there and then all of a sudden you would see them and they would look a little green in the face a few days later and they didn’t come back. They dropped classes or dropped the whole thing. (Ed)
Possible insights into this unrealistic view of university are provided by these comments. They paint a picture of false expectations based upon experiences with limited challenge and rigor.

Like in high school there is really only one hard test you have to take if you don’t take AP and that would be Grade 12 Pre-Calc, and that’s not really hard. (David)

In middle school we were told that high school was going to be much harder and when we got there it wasn’t, so I think a lot of people thought that it was going to be the same thing going from school to university. You had been told this is going to be harder and different kids would be going, “Yeah, you told me that before and it wasn’t!” So people go into university for the first time and unfortunately it is different. (Alan)

A final reflection in this regard made by Mary should perhaps cause concern for the stakeholders in the transition of students from high school to university. She stated:

I think our (Manitoban) curriculum is not really strong enough to prepare our students for university. I think these AP courses are like a stepping stone to university, and I think it does a lot for the kids.

Difficulties appeared to emerge for the students when their perception of university came face to face with the harsh reality of the new environment. All participants witnessed large rates of attrition.

Most of them end up dropping after the first mid-term. The class goes down by thirty per cent. So you walk in the day after mid-term and all of a sudden there are whole sections empty. (Alan)
A lot of people on my dorm floor ended up failing mid-terms, exams, courses, and at that point they were considering not going to university anymore, even at the first mid-term, because they couldn’t deal with failure. (April)

I have seen a lot of people drop their classes. Usually the teacher says a lot of people drop after first mid-term. They mark on a curve and at least my chemistry teacher would show us how many people got what score and I was usually at the top of the curve. I would always be surprised at the amount of people that weren’t there, because after I took the test, I would think it was pretty easy because I had done it before. I would always walk out and think I hadn’t done that well because there were always a few questions I wouldn’t get and I always assumed that I had to get one hundred to do really well and then when we got the results back it showed half the class was failing, like literally fifty per cent! (David)

As well as students who dropped out, participants observed others that struggled through and made the transition, but not without consequence. In connection with this, April said:

They just work harder and they make it through. It’s hard for them. The first year is an adjustment period for them and it’s sad because their GPA gets lowered. If they had taken AP in high school they would have been done that and their GPA would have been higher in their first year and your GPA follows you. So if you bomb your first year but you learn what to do or you have learned to study then you could get all “A” pluses the next year, but that average is still a “C” and it haunts you. (April)

All of the participants felt that they had been well prepared in comparison to many of the students they saw. At the same time that this picture was unfolding, Trish felt: “I had the
advantage kind of. (I felt) that I had prepared myself for it beforehand, and so it was easier for me.” Similarly, Paula said:

I was feeling comfortable in the physics classroom and I guess you realise the more you are exposed to the material the more comfortable you get, because I am a strong believer that everyone has the same potential and it’s just how much work you are putting into it.

Unfortunately AP courses may not be available for many students. The following participants raised this concern about the availability of AP courses.

I pretty much think if anyone is looking at university it should be offered in all schools.

My friend went to a small school out in southern Manitoba and she never had AP although she was a very good student. She said the transition was tough. I asked her why there wasn’t AP. I couldn’t fathom going through high school now without taking it. (David)

I have (a) friend who came from a very small town and he was wondering how I got through my first year so easily compared to where he struggled. He still got really good marks but struggled through it. (Trish)

The final reflection looks at the notion that the rigor that AP students had been exposed to at high school was being experienced for the first time in university by other students. Paula responded to the idea of the benefit of encountering rigor at high school. She said:

It would be interesting to see what would happen to kids that go through first year physics and then retake it, because I feel that would essentially be the same as if you had taken AP right? You’ve been exposed to it and then you go through it again.

Unfortunately, as we have seen in this section of the findings, experiencing challenge for the first time in university without prior preparation can have negative consequences.
The Decision to Enrol in AP Courses

Introduction. The decision to take AP courses is multi-faceted as is shown by the thoughts of the following participant.

I think one of the reasons was that I wanted to be with other students who were serious about their academics. That was one of the reasons. As well, my parents expected it of me when they saw that there was an AP program in high school, and also it was my own personal decision. I thought I might like it. It would be challenging. There would be smaller classes. That would have been a good benefit as well. (Susan)

Sources of information in the decision process.

School as an information source. The information provided by the school, through counsellors and teachers, was found by the majority of the participants to be important. Mary recalled: “[It was] an opportunity presented at school. The counsellors made a pretty good effort in educating the students in their Grade 10 year about the program.” Meanwhile, Linda stated: “I had heard from the teachers that it was quite similar to the first year of university.” Alan also remembered the emphasis on the courses providing a preparation for university.

They had an information session and the big emphasis I remember was that they kept saying this is equivalent to a university course and it is more self-directed learning and this kind of stuff. I’ve known for a while that I was going into university and I think knowing that I would have a background in that kind of learning I thought it would be good to go into those courses.

In addition to the school presentations and information from teachers, school counsellors provided information on how the AP program could work for a student. Alan recalled visiting a school counsellor:
So I went in and talked with the counsellor, because I was debating going down this science road or this computing road. I got advice from her and then mum and I went home and discussed it with dad. (Alan)

**Family as an information source.** Messages from family members also seemed to be important in the decision to take AP courses. In one form or another, parents were influential in all cases, either because they had attended the school information sessions, or they had previous knowledge, or they were simply being supportive of their child. The reflections of some of the participants illustrate this.

My parents went to the meeting but I didn’t. They said I should probably take it (and) that I would be around a lot of students who valued their grades, so it would be good for me. (Susan)

I wanted a more challenging program, but also from my dad I knew for university that you needed to be able to work independently. (Paula)

Both of my parents are in the health care field and so from a younger age I always had this goal of going in to medicine. (Linda)

There was a little bit of discussion with my parents, but mostly it was my own decision. My parents told me to do well in school, but they never actually pushed me at all. (Trish)

Siblings are another source of family message. One participant described how she had been influenced by her sister: “My sister was having a difficult time at another university and I thought I would have a better chance at succeeding at university [by taking AP]” (Mary). Other participants describe the influence of their siblings in the process.

My older brother had taken some AP courses and so I got a lot of feedback from him and my parents were very involved with education as well, so they got feedback from him
and then decided that it would be a good option for me. We all sat around and talked about it. (Paula).

If you really don’t know how it is going to be it would be more difficult to decide. I already knew I was going to do it, but it was more comforting to know someone that had already taken it and has benefitted from it. (Carol)

**Peers as an information source.** Peer groups were mentioned by the majority of participants as being important in their decision to take AP courses. As John recalled:

I probably would have been so much more nervous if none of my friends took it and it was just me by myself, but the fact that they were going into it, it was kind of like, if they can do it I can do it. (April)

Well my friends were taking it, but I would have taken it without them because I even took it in a different order than them, so I was never really in their classes anyway (Carol)

**Self-efficacy beliefs and critical incidents as information sources.** Self-efficacy beliefs and critical incidents were also expressed by the majority of participants as being important. Concerning self-efficacy beliefs, Linda stated: “You know my grades throughout 9 and 10 and even, you know, 8, had been very high and I felt it would be nice to have a challenge in school and see where I might go with that,” and April stated: “You have to take your general sciences first, but me and all my friends did quite well in Grade 8. After Grade 9 it became clear that the basic courses wouldn’t be challenging enough.” The influence of critical incidents is revealed in this statement by Mary: “I had made the decision to go into medical school at a young age because of a traumatic incident in Grade 8 when my best friend died of cystic fibrosis.”

**Challenge as a deciding factor.** The notion of challenge is present in both of the previous reflections concerning self-efficacy. Indeed, the decision to take AP centered on the
idea of challenge for all of the participants. They expressed that they were looking for a challenge in their high school years. When asked if it bothered her that AP courses might be tough, Carol replied: “No. That’s why I wanted it, because it was going to be tougher.” Similarly, Trish said: “It was an opportunity to challenge myself more and see how I fare academically.” Ed saw it this way: “It didn’t intimidate me. I took it as a challenge. I looked at it and (told myself) that there was no reason why I shouldn’t be capable of this. Sure it is a university course, but I will be a university student one day.” For Beth, the search for a challenge had been with her for a long time. When asked why she chose to take AP courses, she said:

AP seemed like the most challenging program in high school. I can’t remember a time when I didn’t want that challenge. I had always been frustrated by the level of teaching. Where I grew up we didn’t have a lot of opportunity for stuff, but I was always looking for more. I planned my entire high school course selection around AP. That was why I was able to do five.

In her statement we can see the importance to Beth of the challenge provided by AP courses. This same sentiment was expressed by other participants in the following ways:

At the time I was ready to accept the challenge because of how easy everything was before. I think accepting that challenge was what made it fun. I mean, looking back at the AP courses, they made high school for me, because of how much fun they were. I know that’s not going to be the same for a lot of people because they go to school for a lot of different reasons, but AP was what made high school for me. (Alan)

I really wanted to take it, because I remember my friends were taking it and I had taken regular classes before and I had taken an advanced science class in Grade 10 and I liked
the atmosphere of the classroom a lot better than science in Grade 9. Grade 9 Science was very easy for me and other students didn’t seem very interested in learning. Everybody really wanted to learn and it was really difficult to get a good grade in that class. I felt challenged. I felt that it was good for me and I wasn’t bored. (Susan)

**Challenge as preparation for university.** April captured the sentiment of most of the participants when she said: “I was already thinking about going to university even though I wasn’t sure what I wanted to do.” Others knew the direction in which they were heading. Paula stated: “I had always been headed in the sciences direction and this was the best way to go because I wanted to be really prepared for university.” There was a sense of future benefit in the words of Carol when she said: “I knew that they were advanced courses and I also knew that they would help me in later life.” Other participants had the same feeling and their comments which follow provide a more detailed look at this aspect of the decision making process.

I felt that AP courses would be a good preparation for university. I knew I was heading towards a career in science which is why AP was more appealing as well to get a good background in science in high school. My brother’s feedback was that it was more independent work. Instructors kind of pushed you to go for your best. It was higher expectations in the classroom and a more mature environment and he had a good experience in first year university as well after taking calculus and stuff. (Paula)

I am not trying to be arrogant, but I was always more capable of doing the harder stuff so I thought why don’t I keep challenging myself. The challenge in my regular courses was kind of hit and miss and I thought when I got into the senior grades it was kind of my chance to hit it home to university and really show that I am serious, and so I thought AP would be a perfect way to go. (Ed)
Lack of challenge as a deciding factor. Many of the participants did not feel challenged by their high school programs up to the point that they took AP courses. Carol was fairly blunt as she said: “I found things too easy in my other classes. You didn’t really have to do anything and that bothered me.” John described it this way: “I always felt in regular stream courses that you could just get by going to class. You know, it was a very base level for all students and it was difficult to go above and beyond that.” Trish showed two dimensions of this decision when she said: “I wanted the challenge and also being in those classes where I felt that I wasn’t accomplishing much pushed me towards trying to do something harder.” This bi-directional motivation of moving away from courses that were felt to be too easy and towards courses that could provide a greater challenge was expressed by many of the participants. An example is provided by Mary in the following reflection.

To be quite honest, when I was going through high school I thought most of the courses were quite easy and I just needed something to push me forward and I wanted to challenge myself more and I thought AP courses just gave me the opportunity to do that.

The key finding in this section is that the participants were looking for a challenge when they chose AP courses. Their search for challenge seemed to be fuelled either by their perception of a lack of challenge in their regular courses, or because they wanted to challenge themselves in preparation for university.

Classroom dynamics as a deciding factor.

Motivation away from frustration and feelings of discomfort. For some of the participants, the motivation to take AP courses originated from the sense of frustration and the degree of discomfort that they had experienced in some of their learning environments. Beth described it in this way:
It was a really bad atmosphere to try and learn in. Like there was no-one that you could do homework with and was interested in the same things you are. It’s not like a healthy learning environment. I feel like if I had stayed in those classes and actually been engaged I probably would have been made fun of. In Grade 9 Science if I knew the answers I wouldn’t say them because I didn’t want to be exposed, but in AP if I didn’t say the answers it was a bad thing.

Other participants had similar feelings of discomfort. Details of the origin of this discomfort can be seen in these reflections.

In regular classes I felt completely out of place. If you actually tried to push towards reaching a goal and the rest of the class were kind of staggering behind not really caring. It kind of put you out of place. (Paula)

It’s hard when you have a class where there are a few students who are always a distraction or who are always causing trouble. It just takes away from the learning experience. Compared to where in AP you never got that. Maybe in the first part there was a little bit, but towards the end everyone was working towards the same goal. (Trish)

Motivation toward like-minded individuals who value learning. Perhaps stemming from the frustrations previously expressed, there was a motivation to be involved with a group of like minded individuals who cared about learning. John expressed it in this way: “I think the main thing was I thought I would get along better with people who also focus more on learning and information and things like that in AP.” David stated:

I liked being around people who liked school and liked learning and weren’t in school for a social experience so much as trying to learn. It was a bit of help with self esteem
because I was able to get with people that were more like me and it was a healthy environment and no one was attacking each other.

The key findings in this section confirm that the decision to take AP courses is multifaceted. Factors both extrinsic and intrinsic to the participants were important in the decision making process. Extrinsic factors included school information, family and peer information, and classroom dynamics. Intrinsic factors included various dimensions of motivation. The desire for challenge and preparation for university as well as wanting to reduce frustrations and be with like-minded students were dimensions of this motivation.

**Important Things Learned from the AP Experience**

**Introduction.** The decision to attempt AP courses marked the start of a significant transition period for the participants. During their time spent in these courses they were confronted with challenges that provided them with an opportunity to develop skill sets that could prove useful beyond high school. Ed described a general complacency that many of the participants had upon entry into AP courses. He talked about becoming active in class as opposed to being passive. In his AP classes he said that he was: “listening and actually reflecting on what I was listening to and not just being there. I learned the difference between being in class and actually listening in class. Just because you are there doesn’t mean you are listening.”

This next section looks at some of the significant challenges that were faced by the participants and the learning associated with those challenges

**Handling the work load.** All of the participants felt that there was a significant increase in the amount of work required for AP courses over that required in their regular courses. It was quite a shock as is shown by the reflections of these two participants:
Being confronted with this massive tsunami of school work kind of wakes you right up and you learn pretty quickly how to cope with a whole bunch of work. Studying for tests I doubled my effort over what I would have done in regular stream classes. I had to in order to get through all that material. (Ed)

I felt I had more homework time. Like after school I had more homework to do than in regular course. In regular courses there was more time between assignments but in AP it was a bit more often. There was more information to absorb. (Rachel)

There appeared to be little resentment over this increased demand. Instead, many of the participants welcomed the wakeup call, which seemed to correspond to their desire for a greater challenge in their courses. Concerning this aspect, Carol said: “I appreciated getting homework. Those were the only classes that I got homework in, pretty much.” The increased amount of work seems to have encouraged the participants to develop study habits. Many of the participants talked about how they began to make organisational and time management decisions to handle the work.

I did a lot more studying. I definitely put a lot more effort into my homework. I actually scheduled myself hours to do homework, whereas before I would just kind of leave it to whenever. (Trish)

I think it helped my responsibility and the biggest thing is that it helped my priorities. It really helped me get my priorities straight and my organisational skills. I honestly believe if I took normal courses I would not have my priorities straight. Everything was handed to you. It was too easy. (April)

At the end of their journey the participants felt that this need to develop these basic time management skills was of benefit to them. As Rachel stated: “I just felt that I knew how to
manage my study time, when to do it and when not to feel stressed out, when to take a break, and that sort of thing.” Similarly Alan stated: “You start to develop good habits early. It’s better to develop good habits there (in high school) and have them, than to have to develop them again or for the first time when you go to university.”

Recalibration of abilities. In addition to having to recalculate their work rates, the participants also engaged in a reassessment of their abilities in this new environment. Abilities based on past performances appear to have been tested as was recalled by the following participant.

I was kind of arrogant based on Grade 9 and 10 Sciences where I didn’t study and didn’t do any homework and I still got nineties pretty much on everything. That changed a lot when I went into AP. I think there was a first test where the material just got a lot harder and I didn’t study and I think I got an “81” and it was terrible. At that point it motivated me to work harder. (Brian)

The previous statement appears to illustrate an attitude towards marks that was somewhat unrealistic and ambiguous. The following statements made by the participants provide an interesting comparison.

The best thing I learned from AP honestly was to actually accept failure. Like I was so scared of failure the entire time but that’s not the point. The point is not to get one hundred per cent. It’s to prepare you for university. (April)

That was actually one of the main things I learned, is not to get hung up on the numbers. If you worry too much about the outcome you aren’t in the present moment enough to do what you need to do to get a good outcome. (Ed)

There appears to be a greater sense of reality and growing maturity in these later comments.
This process of maturing into an independent learner can be facilitated by experiences in the classroom. In this regard, the participants encountered an increased expectation from their teachers which was also cause for concern. Alan recalled a somewhat shocking lesson in independence in one of his classes.

That was a big a shock because that was the first time in school where someone said, “This is what you have to know, but I’m not going to teach it to you, you do it yourself.” That was kind of a wakeup. “Ooh, I actually have to work now!” sort of thing. So that was the biggest shock out of all of them. It was the initial, “So I am responsible for doing this so I had better do it!” I think having that at a younger age when it doesn’t necessarily matter is good, because it actually whipped you into shape, so that when you do get to the point where it actually matters and you are paying money for the course and you need to pass it, you have the background.

**Developing self-efficacy.** The following reflection made by Trish appears to be paradoxical. “I knew I was a good student, but I didn’t really have the confidence in my academic abilities at that point.” We are left wondering about the source of the doubt given that she feels she is a good student. In a previous comment April mentioned a similar doubt because she had not really been challenged before AP. Through the process of engagement with the AP courses, however, the majority of the participants spoke of a developing confidence that they were feeling. Compare the previous statement by Trish to this one. Here she reflected on the impact of AP courses on her self-belief system. She said:

> It made me feel like the effort I was putting in was paying off, which is always a good feeling. I definitely started to believe in myself academically more. I felt more confident in my abilities. I noticed my writing was getting better. Like doing the biology essays
was helping me in English and at that point I wasn’t in AP English, I was just in regular English and AP was helping me a lot, and just my skills I was learning from my AP courses were transferring to other courses as well.

Other participants also recognised that they were developing skills and as a result they also noticed a growing sense of confidence. Here is what April said:

I felt like I was actually developing something. I was learning something. I could feel and I could notice that my capacity to memorize something, to learn something, and to understand something was growing so much. I did get the sense that it was my personal achievement and I felt good about it. The fact that I was getting through it and doing well at it just made me want to work harder. I got a little bit of confidence. It was pretty cool though because I noticed I started helping other people too in normal classes. I felt more confident in what I knew. Like before I took AP I could never have done it. Like I knew my stuff, but I was too shy about it. Taking AP gave me the confidence.

Many of the themes in this section of the findings are included in the following reflection made by Susan.

At first I was unsure because I knew this was going to be a real test of my abilities. It wasn’t going to be like in Grade 3 where if you tried hard you got a good grade. I knew this was going to be if you are actually intelligent you are going to do well. If you don’t try hard then you don’t. I thought it was going to be tough. I honestly wasn’t very confident in myself at that point, because I realised I never really had been pushed before. I didn’t know how well I could do. I didn’t know how much I could handle. After awhile I definitely felt I was getting stronger. My study skills definitely got better. Especially with time management, taking multiple choice tests, doing practice questions,
how I study, reading. Basically my study skills got a lot better. Before (taking AP) I had never felt pressured for time. I always felt that I had a lot of time, but then when I took AP I had to manage my time.

There were two key findings in this section. In the first place, the workload and rigor of the AP courses required the participants to recalibrate the effort that was required in order to be successful. During this process of recalibration, important time management skills were developed. Secondly, initial doubts about abilities seem to have been replaced by a growing sense of self belief.

The Logistics of Taking AP

The decision to take AP courses involves some planning by the students. In the model of delivery adopted by the high school in question, each AP subject involved taking three courses in Grades 11 and 12 rather than just two as in regular programming. Taking one AP course, therefore, meant the loss of a timetable slot in which another course could be taken. Most of the participants took a number of AP courses. The minimum number taken was two and the maximum number taken was five. The following set of findings looks at some of the practical considerations of taking AP courses in this particular setting.

The transition from regular stream programming to AP. The decision to take AP courses occurs for many in Grade 10. In science and math for example, the students in this high school complete their required Grade 9 and 10 credits by the end of the first semester in Grade 10. The first of their three AP courses in a particular subject would then be taken in the second half of Grade 10. Already in the first half of Grade 10, science students have elected to take an advanced or regular science course. Typically those who choose the advanced stream move on into AP courses, but this is not always the case. In this fashion the students begin to pick up the
pace before they move into their AP courses. The participants described the transition in the following ways:

It kind of integrated in. Like you have the Grade 10 first part of the year and then you go in to AP. They do it well so that it is gradual. I liked it. I didn’t think it was a huge jump up from regular. The workload was about what they described. It wasn’t ridiculous at all but it was more rigorous. Looking back I don’t know that I was ever worried. If anything I expected it to be more challenging. (Beth)

There was a huge difference. Just the course load and homework was a lot heavier. There was an increase in the amount of effort you had to put into the class to get out of it what you want. (Trish)

Responses to the transition were varied. In general, the students found the courses to be easier than they had anticipated. At the same time, however, most of the participants recognised that there was an increase in rigor in the courses and required more effort on their part.

**Programming the courses.** An uncertainty about how many courses to take, in combination with simple programming miscalculations led some participants to reflect that they had perhaps given themselves an overloaded timetable in high school. Most students who attempt to take four or five AP courses try and split them so that they can finish two in Grade 11 and then the rest are finished in Grade 12. In Ed’s case he ended up finishing four AP courses in Grade 12. At a later point he wondered if he needed to do all of the courses. He said: “When I got to university and I got that frame of reference, it made me think that I didn’t need to do all of them. I should have chosen three maybe.” Finishing four AP courses in Grade 12 presented Ed with two problems. Initially there was the large workload involved, and secondly the exam
schedule meant he had to sit all four exams over a two day period. His reflections on this situation were:

The workload was challenging. I would recommend not taking all of the AP’s at once. That’s what I did and I found the workload to be quite a bit. In individual courses I found it to be pretty fair, but when you combine them it can be too much. It was too much all at once because the APs got crammed into two days, so I had to do two a day back to back. By the second day I couldn’t care. To me what mattered the most was the course more than the exam. Like the exam could give me a university credit, but I realised as I took the exam that it was more to see how you had done. It was for an external company and it wasn’t going on my record. So as soon as I realised that I said to myself if I don’t know something just move on. I am grateful that I did AP courses. I just regret taking all of them, that’s all. My recommendation would be to pay attention in high school to see what subjects interest you the most. There is no use in being a hero.

Low marks. A concern for most of the participants was the fact that they could be penalised for taking AP course by getting lower marks than if they had taken regular courses. Carol said: “The only drawbacks that I can see are the lower marks maybe, because it didn’t look quite as good on my transcript.” Honour roll status as well as concerns over marks on transcripts for possible scholarships and entrance requirements into certain universities was of concern to the participants. Regarding this aspect Susan said: “Yes that’s why I didn’t take AP English in Grade 12. Like I knew I needed to get really high marks to get scholarships and get into university.” Balanced with this concern was the understanding that the AP courses would be beneficial in the future. David recognised this trade off in his reflection.
The AP program is far harder than the other classes, so you are going to kill these people on the honour roll. We were penalized in the marks department, but we both said it’s the best thing we did in high school, because it made us stronger in the learning department.

**Social emotional concerns.** High school life for some students can be busy. Balancing academics with extracurricular activities and maintaining social contacts can be a challenge. Fitting everything in to a busy schedule posed a real challenge for the participants. Mary talked about the tension that this created for her:

> It was really stressful because I was a growing teenager and I was well behaved, but I had issues with my parents. It was kind of like a power struggle, because at the same time that I wanted to be successful in academics, I also wanted to be a good friend for my friends. If I was solely in academics I wouldn’t have time to be there for them when they needed me.

Susan said: “I worried about how I was going to fit in study time, but I didn’t really worry about my social life. I had my friends who I hung out with but I didn’t have a very big social life.”

Meanwhile Ed said: “I did have to cut back on friends, music, playing instruments and stuff. I wouldn’t say totally out, but I did have to cut back a little bit.”

Having friends who were also engaged in AP courses seems to have helped the participants. When asked about the importance of peers doing the same courses, Linda stated:

> Honestly I don’t know how I could have gotten through without them. You know, I think it would have been kind of tough to be going through these courses and the amount of work I was doing while my entire group of friends was going out and having a good time.

John talked about competition in the AP classes. He stated: “I never encountered anybody that wanted to do well at the expense of other people.” On the other hand, university experiences
appear to have been different. Linda lamented that at university she had “…lost friends over it [competition]”. This was echoed by Paula when she said:

Especially in university there are some students who are getting their “A+” and they will not help anyone on their way. They want to get that one grade. You do see that and you do see that they don’t have a group of friends.

The findings in this section deal with the logistics of taking AP courses. In general, this model of delivery appeared to work for the participants although concerns were expressed over the impact of grades. Friendships during this time were found to be an important factor.

The Importance of Time Constructs in Motivation.

The majority of the participants showed a strong future orientation. Among the comments cited were those by Linda, who said: “I think I have an ability to really have a future goal in mind and for me it’s always been medicine and so that was just my driving force to keep going.” Another participant spoke of being a future oriented person in this way:

I am a future goal oriented person. I actually have a list of goals for myself on my cell phone right now. They are long term goals where I see myself in three to five years. Right now, even if I do get a bad mark, I realise it is one small thing and it is going to be a tiny part of my life and it isn’t going to define me and I get back up, I read some inspirational quotes on line and I review my goals. When I fail at something I usually like to reflect on the things I have been good at in the past and I tell myself if I could do it back then I can still do it now. (Susan)

There is evidence in Susan’s statement of another aspect of how the participants view time. In addition to being future oriented we can see how she uses past positive experiences to motivate herself. These statements are evidence of a much larger concept that seems to exist and
that is that all human activities take place on a time continuum. As such, events are either anticipated in the future, occur in the present, or have already occurred in the past. Most of the participants, like Susan, appear to have positive attitudes towards their past experiences, even when those experiences had been difficult. This aspect was also illustrated by John when he said:

Not dwelling on failings and instead dwelling on successes makes it a lot easier to work in the university environment, because there is so much pressure and coming out of the AP program you feel better able to deal with it because you have seen it before and also you have felt the pressure before.

The following statements also illustrate the position of the present in the time constructs of the participants. Both Ed and Trish demonstrated a strong present focus in their statements. Ed said: “I was aiming for fours and fives and honestly I wasn’t thinking too far ahead,” while Trish said:

As a career path I don’t know what I am doing, but I know that what I am doing is good for me right now. My short term goal is to get my bachelor of science, but I am not sure where it is going right now.

Having a strong future orientation appeared to help the participants stay on track. They had to make tough choices, for example, studying rather than hanging out with friends. This encompasses the idea of delay of gratification and was expressed by Linda in the following manner when she said:

All my friends were taking it [AP] so it was kind of a common interest we had. However, I did lose touch with people that didn’t have the same goals in mind. I had a lot of friends in high school that were more concerned about what was happening on the
weekend or going out after school and so it was tough to have that kind of work ethic, to say I need to focus on my studies and do school work.

The key finding in this section was that all of the participants appeared to have a strong future focus. This was found to be an important factor in the motivation fabric of the participants. Past events of a positive nature were also found to be beneficial in this regard.

**Self-efficacy and Resilience**

**Introduction.** The notion of self-efficacy is suffused throughout the statements of the participants. It is perhaps not surprising that all of participants should have spoken of self-efficacy since the journey through high school and university is filled with challenges and obstacles that have to be overcome. Developing a belief in one’s abilities to handle these challenges is crucial to the success of the individual. Inherent in this concept is the fact that one inevitably has to experience adversity in order to develop resiliency. As we have previously seen, prior to taking AP courses the participants had experience little stress in their school careers. The challenges posed to the participants by AP courses seem to provide an opportunity to develop the crucial aspects of self-efficacy and resilience.

**Resilience.** We can see the stress created by the new challenge of the AP courses in the reflection of the following participant.

At the beginning of the course I was overwhelming myself, but as the course went along I started picking up the pace. I started adapting, adjusting, and I think I learned a lot of skills about time management, organisation, precision, and decision making because of the pressures and challenges that had been put into this course, and I think that is very valuable in my life currently (Mary).
In this reflection there is also the idea of the process of adaptation and adjustment or a recovery to a state of normal functioning, all of which are indicators of resiliency. The challenges presented by the AP courses appear to have been constructive rather than destructive, and were informative rather than demoralizing. In the process of being exposed to adversity the participants developed a mental toughness or resolve. John described how he handled the possibility of failure in a positive way when he said:

Yeah and not quit once you failed. I think if I did I wouldn’t have gotten through AP. Having that ability to keep going even though you didn’t do as well as you hoped is something that every university student needs to have. You just have to pick yourself up and get through the course or get through the week.

The informative nature of failure was expressed by Mary when she said: “Failure can be a great teaching tool. If you fail, you learn what you did wrong.”

All of the participants described the benefit of having to work through some of the anticipated challenges of university while still in high school. John recognised this when he stated: “I had that confidence that I had seen the material before and I had written a big exam and I had been able to study on my own, so I could do it by myself.” John commented on his resilience when he stated:

Towards the end [of AP], especially after exams, I was thinking that nothing I’ll ever do is going to seem that hard and I was later proven wrong by a few things at university, but I’m much less intimidated now in university, because I know deep down that I did AP.

Self-efficacy. The belief in one’s abilities to handle anticipated events in new situations is critical to a successful transition from high school to university. Trish described it in this way:
I was a quiet kid going into AP with not a lot of confidence. Coming out I had opened up more and definitely gained a lot more confidence. I think it was partially class size and partially the whole experience of AP. You get to find more confidence in yourself which helps. You can just disappear in big classes in university.

Beth described writing a calculus test in university in this fashion: “That is always really nice when you go into a calc test and you ace it. It is a wonderful feeling.” There is a sense of confidence in her words which is echoed by Ed when he said: “AP definitely made me believe that I could be successful in university. It would almost be guaranteed as long as I kept up with my work and did my studying.”

**Self-efficacy by mastering skills.** One of the primary ways in which beliefs in one’s abilities can develop is through experiences that lead to mastery of skills. Meeting the rigorous challenges of the AP courses seems to lead to the development of skills that promote the confidence to handle new academic challenges. When asked if he felt that he had developed skills through his AP experience, John replied:

> It was probably in my Grade 11 year that it was starting to pay off. It was paying off in terms of knowledge and in my work ethic. In my other courses I felt like I had really figured out how to study and what worked for me.

Carol had this to say about her AP experience when she confronted a new and challenging academic environment.

AP was a big help, partially because of the knowledge. When we were writing the exam to get the scholarship it helped, just in general knowledge and in writing essays, and it also helped me feel more confident, because I knew I had already taken some college
level classes, so I knew I could take classes that were at a higher level once I got to college.

Meanwhile Susan had this to say about the role of AP in her self-belief systems:

I don’t think that my confidence really increased, but I know, like for sure if I hadn’t taken AP, my confidence would not be good for first year university, because I wouldn’t have been able to do good in my classes. That I know for sure, because even though this is the second time of going through all the course content, I had to study very hard to get the grades right now and a lot of my self esteem comes from my grades. So if I hadn’t done AP I would have done worse and my confidence would have been not good at all.

The sense that AP is perhaps a vehicle for the development of self-efficacy is embedded in the following reflection from Ed. He said:

I’ve always had a pretty strong sense of my abilities but the AP was really good in providing evidence that I really could do it. It provides a vehicle to work on that aspect and the result of the AP provides you with the evidence, either confirming the belief in yourself or telling you that you need to get with the program a little more.

According to Ed, the AP courses provided the participants with the feedback to allow them to gauge how they were doing in their development. In this regard, as well as ongoing assessments from their instructors, the participants sat an examination in each course. For most this was the first time that they had set an exam that had been prepared externally by the administrators of the AP program. The participants recognised these exams as being the biggest challenge they experienced in high school. In addition to this it was possible that the participants might have experienced an increased challenge if two of their exams were scheduled for the same day. David reflected on this challenge in the following manner:
I was sort of scared about AP exams at first because it was a new thing. I wasn’t so scared in the second round, but the first time I was pretty terrified because it was something completely different, but we did a lot of practice and you sort of had an idea of what was coming, but at that time it seemed like such a huge amount of information because compared to everything else you do in high school it is a huge amount of information. I now realise it is not such a huge amount of information and I just didn’t know how to learn.

We can see in David’s reflection how having met the challenge in the first instance in Grade 11 appears to have led to a greater sense of confidence the second time around in Grade 12.

*Self-efficacy by proxy.* Peers provide another important source of information for the development of self-efficacy in the individual. Individuals are sensitive to their position among their peers and regularly make comparisons. In this regard the overall majority of the participants talk of AP courses as being competitive but in a healthy way. As Chris talked of this competitive aspect he described how it reinforced his feelings of self-efficacy. He said:

> I would always compare myself with others. I wouldn’t make it a competition outwardly. It was more of an internal thing for me, because I hate making other people feel bad. If I beat them it’s not flaunting, it’s just more of an internal reinforcement. It helped me feel better about myself and gave me a reason to do stuff.

Other participants expressed similar reflections:

> Like in Organic Chem, I have an “89” or so, but I know it is one of the highest marks in the class, so it gives me some confidence. (Beth)

> It’s almost like being surrounded by that group of students that are also pursuing that AP course with you is like a confidence booster. Like, I can keep up with these people who
are heading in the same direction as I am. That was helpful in terms of grounding
yourself and realising where you are heading. (Paula)

A final aspect of self-efficacy that was expressed by the participants went beyond academic
skills and concerned interactions with peers and instructors. John felt that:

AP really showed us how university was going to be. You are going to be in there with a
group of people that are just as engaged, and you are going to have to compete with them
and co-operate with them at the same time, and can you meld those two things together.

In one course that some of the participants took they were challenged to take a national
biology competition. In the process they would be compared to approximately 7000 of their
peers across Canada. Susan said about this experience: “I was a little intimidated
by competing
against kids across the country because I didn’t want to find out I wasn’t as smart as I thought I
was.” Colin saw it this way:

I was in the top 250 and I felt pretty good about that. It was the first time I had been in a
big competition. I was nervous, but I remember feeling really good afterwards, because I
knew how many kids had written it and I knew I was in at least the top quarter.

Other sources of information came from helping others with their school work. As Paula
said: “That’s a confidence booster too because you end up helping the other students. You know
it solidifies your knowledge when you teach someone else.” Comparisons with others’ abilities
and other levels of work were sources of information for the participants as is shown by the
comments of the following participant.

When I helped kids in lower level classes the material was really different. Like, if I was
in physics and I helped someone in regular physics, like their material was just a lot
easier and it showed me how different AP was. (Carol)
Teachers and professors are also sources of information. David described how he felt when a professor suggested that he could take a harder level of course. He said: “I thought it was something interesting. I liked it a lot and it was a confidence booster and that prof is now my advisor. It was a confidence thing.”

The key finding in this section was that the participants developed resiliency and self-efficacy through their AP experience. Instrumental in this process was the informative nature of confronting adversity and persevering through the challenge. The development of self-efficacy and resilience appeared to result from the experience of having mastered challenges. Comparisons with peers were also found to be an important source of information in the development of self-efficacy.

**The Learning Environment**

The large number of comments concerning learning environments, both within and between the interviews, would suggest that this is a vital component in the journey through high school and university. Learning environments are multi-faceted and dynamic systems. This next section of the findings looks at the reflections of the participants concerning the important components of these environments

**Motivational aspects of belonging to a community of learners.** Being involved with students who were interested in learning appears to motivate in a number of ways. Paula talked about the excitement she felt once she arrived in her AP courses: “I knew that all the other students were also interested and wanting to learn.” It made the biggest difference and kind of made it more exciting.” The same notion of excitement was expressed by Susan when she said: I was excited because I felt like I would be going somewhere. I felt like I could get better and that this is going to take me somewhere. I expected the class to take homework
much more seriously and I expected the teachers to have much higher expectations of
their kids and to not take any fooling around. I felt like I had lots of work to begin with.
I just felt like the teacher didn’t have to push their students to do well. The students
actually wanted to do well themselves. In other classes they go soft on their students.
They will push back deadlines and allow assignments to be turned in late. I felt better
about the challenge because I really value homework and I like people who are similar to
me I guess.

There appeared to have been a sense of wanting to keep up to the group. Paula expressed
it in this way:

I also found just the students in the class were also more determined in terms of reaching
different goals and at being prepared for exams for example. That helped because it’s not
quite a competition but you want to keep up to pace with the rest of the class.

For some who weren’t as focussed, being with motivated individuals seemed to provide a
structure that helped them. Regarding this aspect Colin said: “Being with a group of AP students
you get more focussed on the work...It helps me. When I am with kids that don’t really want to
be there it hurts a lot actually.”

Altogether, accessing AP courses was significant for all of the participants. The new
environment appears to have provided a sharp contrast to what they had previously experienced.
The frustration of being in environments where learning was not valued by all appears to be
replaced by gratitude at being in classes where the opposite was true. The notion of AP classes
as a refuge is present in the following statements.

AP gave that little refuge in high school. [AP] showed that things got better and that
there were people out there that were like-minded, and that helped a lot because you were
with people that didn’t necessarily fit in with the rest of the high school spectrum either. (John)

I think AP was almost like a safe place because you had that group of people who were going through the same thing and you were all working towards the AP goal. It did give me more confidence. I don’t exactly know how, but it did. I definitely came into high school as a shy quiet person and left as a confident person. (Trish)

**The learning community: familiarity versus anonymity.** Based on the responses of the participants, one of the most critical elements of the learning environment appears to be the presence or absence of a sense of community. Alan described the contrast in community found in high school and university in this way: “For our biology class for example, it is hard to say that we were individuals in the class. We were the class. At university in our chemistry class for example it was hard to say that it was anything more than a group of people learning chemistry.”

The sense of community felt by the participants in high school appears to have beneficial possibilities as is shown in the following reflections.

Definitely it felt a lot closer at the end of three semesters. You got to know your peers better. You felt very comfortable and although I wasn’t intimidated by the material, it was challenging, and having that comfort level, that feeling of community, and of really knowing your teacher well, really helped actually get through the material. (Ed)

It’s good because you are able to be yourself more too, which is where it helped me because I was able to be myself and grow as a person, because there weren’t any changes occurring around me. (Trish)
On the other hand the anonymity felt in large university classes appears to have a negative impact. John stated: “In my first year classes [at university] I was one in two hundred maybe and never said a word to my professor. He had no clue who I was.”

An important dynamic of the classroom in high school is the forging of strong relationships with instructors and peers. Forming friendships with people that are like-minded and following similar paths is important. These friendships extend on beyond high school and into university.

I think some of the friends I have now I met through AP. You kind of pushed each other to do better, which is what you need. There were a few nights especially before tests where everyone would get together and we would be worrying about the same things but we would all help each other out. It was nice to have that support group. (April)

I also found that there was a core group of students that really followed through in that program and I found that even just being surrounded by those few students you grow closer together so you have a close group of friends to help through the coursework and high school in general. (Paula)

The following participant talked about the loss of community being tempered by the fact that a number of his friends were in the same classes as himself. He said about this loss of community:

I think the only reason that I hesitate on that was because I had school friends in almost every class I had that first year, so I still had a tiny little bit of it, but with professors and large classes...that aspect of community was completely gone. (Alan)
For some, the sense of community facilitated engagement with the course materials. Again, this engagement is potentially lost in large impersonal classes at university as is illustrated in the second of these reflections.

You know as students...we all worked together and the instructor kind of engaged that way. You know, we were all kind of exploring it together and that was neat. I felt I was more engaged in the course. (John)

Paula felt that she initially lost the sense of community when she went to university. She reflected on how she felt she had regained some of that back in her senior courses at university. In the last sentence we can sense the anxiety caused by the loss of familiarity in a new impersonal environment.

I mean I took my advanced anatomy class this year and we had ten students. It was almost the same as the numbers from my AP class. Like, you knew everyone in your class really well. You could have one on one time if you needed. So it was more familiar. In the big classes in the auditorium the teachers don’t know who you are and you are still getting used to the university experience in general. (Paula)

The idea of the difficulty of feeling engaged in the learning process and the difficulty of feeling connected to large university classes has occurred in these reflections. When asked if they felt these difficulties were a function of the class size the participants offered these observations:

In my first year my biggest class was about 80 and my smallest was eight. In the class of eight you walk in and the anonymity was still there, but I think because it was a smaller class and because the professor was good, the group grew a lot faster, so some of it is
dependent on class size but also a big factor is the professor, because I also had a class of forty and that class grew quickly too, like in asking questions for instance. (Alan) Like I think in big classes it is important for the professors to really bring themselves to the students and get people knowing each other. In AP we were always encouraged to talk to other people and it was really good and I think it is really important for the professor to make a sense of community in the class. (Alan)

In these statements it is apparent that the role of the teacher or professor is paramount in establishing the sense of community. As a student coming to a new learning environment, there is the sense that this loss of community causes stress. Trish reflected on it in this way:

A lot of kids that come to Brandon are from small towns and so they might be the only person from their graduating class, so they don’t really know anyone and then they get into these courses and they don’t have that experience to help them along and they just struggle through the whole experience.

Even if first year students at university have a network of friends, their first experiences at university can be difficult. On the subject of the loss of community, Paula had this to say:

At the beginning yes because you are getting used to the experience right and it would be nice to have closer contact with the professor. Like should we emphasize on this topic. They don’t like giving you information like that. I had lots of professors that don’t give you that information. (Paula)

Some of the participants had attended post-secondary institutions which appeared to recognise this period of difficulty. One of them talked about a program in which she had been involved as a first year student.
They did have a “journey” program where there were fifteen students in a similar major to you and you had at least two classes with each other and your journey leader was a professor. It was helpful in that I got to know him and he got to be one of my primary professors. I did get to know the other students as well although most of them are no longer chemistry majors. I made some good friends and my professors have been really helpful in terms of stress related things. They understand and they are good, not like in terms of not letting me write a test because I am stressed but like in terms of having someone to talk to. (Beth)

In this program, intentional efforts appear to have been made to build a sense of belonging to a learning community.

Finally, as a counterpoint to the previous discussion, one of participants offered this reflection on the idea community.

If you have really big classes it’s gone but you don’t feel cold about it at all. It almost feels like childhood where you grow up and you leave. You depended on the community in high school but it makes you independent, because the AP community in the classroom is like “Okay we have given you the tools you should be fine now.” It was kind of like leaving the nest. I actually feel pretty good being independent and responsible, both skills I learned and honed in AP. (Ed)

Developing into an independent and responsible student is a worthy goal for all individuals. The majority of the comments given by the participants suggest that the abrupt change that occurs upon entry to university provides a problematic start in this process.

**Congruence in courses.** Another aspect of the learning environment that appears to be important to the participants is the congruence within their courses, both in AP and at university.
Congruence in a course implies an agreement between events that happen in the course, which leads to the students being confident of the expectations of the course requirements. The participants felt fairly treated when the course structure was reflected in the final assessment. Mary expressed this in the following way: “It became obvious that there was a harmony between what we would be doing and what we were asked to be doing.” On the other hand, the participants expressed feelings of resentment and frustration when this basic premise was not met. Mary talked about this when she said:

You know, it’s hit and miss [in university]. Some professors are very good at preparing you. Their testing style and coursework reflect that. There’s been some where you almost get hit over the head, so to speak, in the final exam. Sometimes you don’t know what you are walking into and it’s frustrating.

**Congruence between coursework and assessment.** There is a general agreement from the participants, that they did not experience many surprises in their AP exams, and that for the most part they felt they were well prepared. On this matter David said: “The AP exam was set standard. So there was the hope that we had gone through everything in class and everything on the test would have been mentioned in class for the most part that was the case.” Trish echoed this sentiment but also suggested a significant difference between AP courses and those of university.

I felt like most of the time I knew what the format of the tests was going to be partially because the teacher would tell you and then you would know what to expect and how to study for it, whereas in university you don’t get that. You just know you are going to have a test. You know there might be this. You know there might be multiple choice but you don’t know exactly what it is. You know that it is going to take longer to prepare to
do well on a test like that when you don’t know what exactly the format is, what to expect from it.

In the following complex reflection from Beth she illustrates the frustration caused by uncertainty in the tests given by one of her professors. Although she seems fairly stoical about the situation it is clear from her words that this was a cause for concern and we can wonder about the validity of the pedagogical technique employed by the professor.

There are definitely more surprises on tests. My chemistry professors are bad for that. Like they will talk about something in class and then they will test you on something else. I never saw that in AP. It always kind of pisses me off. I mean on one hand if they test you on something from the textbook then you know you should have been studying that, but when he talks for three weeks on something else and it is not on the test. Or on the next test you say you are going to learn everything perfectly from the text then you get tested on something covered on the lecture that isn’t in the textbook. That’s always a challenge. I get really angry for about a day and then I say, “Alright there’s always the next one and I will do better on the next one”. I have told him but I think he takes secret pleasure in pissing us off.

Unfortunately this wasn’t an isolated event as was reflected in the comments of other participants.

For the most part you have a pretty good idea of what you are getting into for the exams. There is the odd exam where you go, “Whoa! Where did that come from?” Usually the feeling is consistent amongst all of the students, so it’s usually more a problem that the professor had in making the exam. I have had a couple of exams where the material was not covered in class, and sometimes the problem is that teachers use past exams without
really reading them through, so there is material that was never covered this year but was three years ago, and I mean those questions aren’t really fair, right? This never happened at high school. (Paula)

I remember I got an 81 or an 82 on my first chemistry exam and it was all stuff I had done before. It was fairly simple AP chem. It was just the way they worded the questions and the amount of work they expected you to do in only two hours. It was almost as if they wanted as many people to fail as possible. I had “A”s and other people that had done AP had around the “70”s, but the average mark was still failing. (Brian)

If we examine the final statement we are perhaps left wondering how those students who had not taken AP were feeling. The situations expressed in these statements, while widespread, appear not to be universal as we can see from the following participant, who compared his experience at his university with his friends at theirs. He said:

I have had really good luck with tests. I did get text messages from some of my friends from their university about chemistry, not knowing if they could even finish the course. I couldn’t understand what was so bad because we had done it all with our high school.

(Ed)

In this case, we are again left wondering perhaps if this level of inconsistency between institutions should exist.

The final reflection here provides an illustration of the serious impact of these practices. I complained a lot to other people. I didn’t do much because everybody had that feeling already. Like I don’t know if anyone has voiced it to the professors and they just don’t care or whether nobody has actually voiced it to them. I imagine they have told them that they just don’t care because it is the only department where I have ever felt that. It is
frustrating. It can cause career changes. I had a friend that was going into chemistry. Now he isn’t. He is gone. When I said I wanted to be a doctor in my third year I went to take some chemistry courses and because of those courses I said, “No!” Like even though I love the medical field and I’m really interested in that kind of stuff, because of those courses I said “No!” because of those professors there. I had applied to U of M when I was going to university. If I had gone there I would probably be on a completely different career path. I would probably be going to be a doctor. (Alan)

There is a lot of emotion expressed in this last sentiment. What is apparent from these reflections is that pedagogical practices appear to reduce or elevate stress. To a large extent this appears to depend on whether or not there is congruence between what the students anticipate and what they actually get in the way of assessments.

Congruence between coursework and anticipated future studies. Concerns over course congruence also centered around whether or not the course prepared the participants for future events. The perceptions of the participants concerning their high school experiences as a preparation for university are considered here. On a positive note John stated: “The AP exams are exactly what you are going to see in university as far as the types of questions, the length of time, the degree of difficulty, and things like that”. Other participants echoed this sentiment when talking about the relevance of multiple choice questions they had done in high school. Rachel said: “Most of it was multiple choice tests during my first year because of the large classes. In AP we did masses of multiple choices so it just became second nature” and Susan, who said: “Multiple choice helps a lot not just in biology but in every subject. I realised when I first went to university that that was one of the most important testing skills to have.”

On the other hand, Linda expressed her concern over one AP course when she said:
I didn’t feel I gained as much from one course. Taking the first year course at university was nothing like the AP course. I was a little disappointed with that one to be honest and a little upset with the time that was put in to it.

**Role of the instructor.** The efficacy of the instructor who develops the learning environment appears to be instrumental in whether or not that environment facilitates or hinders the development of the students. The final aspect of the findings looks at the ways in which instructors at the high school and university levels support their students. There appears to be no general pattern in high school or university. Findings present factors that were important to the participants.

**Teacher role.** Simply being an AP teacher is not sufficient to develop a constructive learning environment. The teacher cannot just show up, but must also meet the expectations of their students. Carol described the difference that she saw: “The teachers were good. I really liked all my teachers. They helped more and actually cared about the material a little more.” David seemed to echo this sentiment when he said: “Most of the AP teachers promote their students in trying to academically achieve. I got the sense that some of them didn’t care, but overall I felt I had a good idea of what real teachers are like.” The following two participants reflected on the importance of the attitude of the teacher. Brian said: “I liked the way that some of the teachers taught it. I need enthusiasm from the teacher. If you are one of these sort of screw around teachers I don’t like that.” Finally Ed reflected on the effect that the teachers had on their learning environments.

For the AP classes that I did receive what I expected, it corresponds to what I told you in terms of you could tell that the teachers really cared about learning and really took it seriously, and in those same positive classes I found that the kids were also very receptive
because of the teacher’s attitude as well, which calmed them down and everyone seemed more ready to learn and were enjoying their experience, which means there was less off-task behaviour making it easier to learn. If the kids see that the teacher just doesn’t care or isn’t trying hard then the kids won’t try either and if the kids see the teacher really trying then they will want to respect the teacher and try hard as well.

**Professor role.**

*Messages.* Many of the participants experienced messages from their professors that probably would have been quite startling at a minimum and may have been quite disheartening at another level. Some of these messages, both explicit and implicit, might have been experienced for the first time.

The professors were aiming for an average of less than 50 it seems. That was the main class where I said to myself that they don’t seem to care. They make their exams purposefully hard because they don’t want to teach and so they will get smaller enrolment in their upper year classes. That was what made me really mad, because there were four midterms first year and two exams. I think out of all of them maybe one of them had an average mark higher than fifty and when you see that half of your class is being devastated by this and they will come up to the board and give you all the marks and then when the professor comes in and says to the class that they have ranked all of you on your test and on the top of your page it says where you are in the class and this many people in the class and if you are in the last twelve you should drop. Like what kind of learning environment is that. That is absolutely ridiculous! (Alan)

For some the message may have provided information, but for Alan, there is some emotion to his words and the messages appear to have affected him strongly.
Lack of care. Given that it was a new environment in which the students did not know their professors, and given that there were may have been a lot of students in the class it is perhaps not unreasonable to imagine how professors might be perceived not to care. Paula was fairly blunt when she said: “Prof’s don’t care. They get their money. They don’t care if you have done your work or not.” A similar sentiment was expressed by April when she said:

University is so different from their high school experience. You don’t just know how to study and do well because everything is so different. Like the teachers don’t get on your case anymore. They won’t be like, “Do your homework today because you are going to get a test soon.” I got the feeling that since I was in a huge class the professor could really care less if you did well or not because the professors always know there will be students that will do well and ones that don’t deserve to be there.

Meanwhile Alan and Trish both saw the lack of caring as a result of teaching not being the primary concern of their professors. Trish said: “There are a lot of professors that would come in to the lecture and then would leave and here are their office hours if you need anything otherwise don’t bother them.”

It was kind of the first time that you were being taught, let’s say in chemistry in particular, where they don’t care if you fail. They say they are there to help but they are not. It’s just a job to them. They want to do their research. They don’t want to teach. You get that feeling for the first time when you get certain classes and certain professors. The course I took in first year, at least the professors I took them with actually didn’t seem to care how you were doing. (Alan)

Care. Not all comments were negative and there were some examples of instructors who showed a degree of care. According to Alan, while he felt that certain departments at his
university were not doing a good job he had special praise for the Physics department. He said: “Physics is an extremely good department. The professors care a lot about the students.” Other participants found some of their professors to be approachable when seeking help. Rachel thought that end of course performance assessments of the professor might have been instrumental.

If I had a quick question I would usually email them first to set up an appointment. If it was a quick question you could go to them before class or after but usually if I had a longer question I would email first. Most of them are pretty open and if you can’t meet them during office hours they will make time outside their hours. They have year-end assessments from their students and they will take that into consideration.

Teaching background. In a similar fashion to their acknowledgement that their AP teacher was not necessarily efficacious simply by title, the participants also recognised that even though their professors may have been experts in their fields, it was no guarantee that they were efficacious as teachers. Alan saw a possible change that could occur in their training:

Especially for university professors, teaching is just part of what they do. There is also their research. Maybe they should get some educational experience to the professors, because you can go through your PhD and barely have taught anything. They can do labs and stuff like that but they have no formal teacher training so I think that could be one major thing that could change.

The participants had felt engaged in some of their AP classes as a result of the interactive pedagogical processes employed by their teachers. In contrast to this, there is a sense of disconnection in straight lecture environments. Trish saw it this way:
Just the way the classes were taught. It was a lot of lecturing compared to AP where there was more involvement with the subject material. In university the professor just stands in front of you and lectures and lectures.

The most significant finding in this section is the benefit to students that can be achieved by being part of a learning community. Instrumental in this aspect is being with an instructor whose efficacy is critical in developing this sense of community. Another important finding is the effect of congruence in course structures. Congruence appeared to be beneficial, while the lack of congruence contributed to stress, anger and frustration. The final finding in this section suggested the critical importance of pedagogical processes in the learning environment. In the following chapter all the findings will be analysed within the context of the literature previously presented and the conceptual framework.
Analysis, Interpretation, and Synthesis of Findings

Introduction

The purpose of this case study was to explore the role played by Advanced Placement courses in the transition of students from secondary to post-secondary education. The study explored the transition as seen through the eyes of students who had been involved with these courses and who were now attending university. Through the perceptions of their experiences, the study attempted to illuminate the factors that may have been instrumental to the students in their transitional process. The rationale for this study emanated from the desire to uncover ways to help more high school students make a successful transition to post-secondary education. Increased understanding of the journey from secondary to post-secondary education might reduce the number of students who experience difficulty during this time. Knowledge of this transitional process could be used by stakeholders to inform programs, both at high school and university, with the possibility of improving the articulation between the two levels of education. Adjustments on both sides of the transition bridge may help to reduce the serious loss of human capital currently experienced.

The research attempted to move beyond the more traditional cognitive indicators of success, such as high school performance, and attempted to delineate those factors in both the cognitive and affective domains, that had been instrumental in the transition process for the individuals in the study. To this end, the study used naturalistic inquiry to collect qualitative data by conducting semi-structured, in-depth interviews with twelve university students who had taken AP courses while at secondary school. Initially the data were coded, analyzed, and organized by research question. Consistent with the exploratory nature of the study, the second
layer of data analysis involved sorting the data by emergent categories, as indicated by the evolving conceptual framework. The study was based on the following five research questions:

1. Do the participants perceive benefits from having taken Advanced Placement courses, and if so, what benefits do they perceive?
2. On completion of their first year of university, how do the participants perceive that they had been prepared for the challenge of university?
3. What were the perceptions of the participants regarding the challenges involved in taking Advanced Placement courses?
4. What factors do the participants consider to have been important in their choice to take Advanced Placement courses?
5. When considering the journey through high school and on into university, what factors were considered to facilitate the process and what factors were considered to hinder the process?

The five research questions were designed to allow the participants to describe their journey through high school and on to university and these questions were largely answered by the findings presented in chapter 4. The overriding finding in this study was that the participants perceived that their transition to post-secondary education had been facilitated by the experiences gained in their AP courses and that, in the vast majority of cases (92%), it had been a successful transition. Knowledge of course material to be taken in university, together with the acquisition of study skills and habits were perceived to be the primary benefits of having taken AP courses.

This chapter will provide an analysis, interpretation, and synthesis of the findings and is organized into the following analytic categories:

1. Successful transitions. (Research Questions 1&2)
2. The choices and challenges associated with taking Advance Placement courses.  
   (Research Question 3&4)

3. The role of the learning environment in transitions (Research Question 5)

These analytic categories are derived from multiple levels of analysis of the findings. In this analysis, I have attempted to explore these categories in depth to illustrate the patterns that emerged within. In addition, analysis across categories was used to illustrate overarching themes.

Whereas the previous chapter presented the findings of the study by organising data into categories to produce a sequential narrative, the purpose of this chapter is to provide interpretive insights into these findings. The findings chapter is a reflection of the process in which the original data was split apart and sorted into related pieces. In contrast, this chapter attempts to put all the pieces back together through analysis and synthesis to form an integrated holistic model of the transitional process.

Initially, similarities between the ways in which the participants perceived their experiences were noted to establish key patterns. Although the experiences of the participants may have been similar in event, their conceptualization of those events was different, reflecting the individual nature of their perceived experiences. Analysis involved recognising these different perceptions of similar events in order to build a more complete picture. During analysis, I was mindful to remain open to unexpected connections, rather than simply look for the anticipated connections that framed the study. Finally, the developing structure was reflected against the body of reviewed literature to determine consistency or otherwise and also to determine if, and in what directions, the findings went beyond the territory already explored.
The discussion is set against the backdrop of the literature concerning post-secondary education, AP programs, and aspects of human development. The journey of students from secondary to post-secondary education takes place in a dynamic environment that involves interactions between many variables. Through the analysis of the perceptions of the participants, it is hoped to provide a greater understanding of key elements that facilitate a successful transition. The chapter concludes with a summary that incorporates a note of caution regarding the effect of possible researcher bias in interpreting the findings.

Transitions

Transitions are integral to the lives of humans and involve changing from one state to another. In some cases they are a necessary condition of our biological development, as in the transition from adolescence to adulthood. In other cases these transitions are not dictated by biology, but are nonetheless a necessary part of human existence, such as when an individual transitions from the world of school to the world of work. These changes may not be just physical but may also involve recalibration of our thought processes, as we readjust and reorganise the internal constructs that make up our being. There is no implication concerning speed when considering transitions; they can be both gradual and abrupt. While gradual transitions give the individual an opportunity to prepare for the event, or allow the individual a period of time to adjust to the changing conditions, abrupt transitions provide no such luxury. Pregnancy potentially allows the parents to prepare for what will be a life changing event, whereas the sudden loss of a loved one creates an abrupt transition for which there is no preparation. Even when there is an opportunity to prepare for transitions, they inevitably provide surprises to the individual as it is difficult to accurately experience an event just by mental preparation.
Transitions are commonplace in education. Each progression through the respective levels of schooling involves a period of transition. Up until the point that the students choose AP courses, the differences in the expectations from one grade to another are not enormous and involve a gradual process of skill acquisition. Curriculum documents oversee this gradual process and provide for a co-ordinated and sequential development of skills. Articulation between the grades is embedded in the scope and sequence of activities that are taught. Topics are revisited and new knowledge is built on previous learning in a constructivist manner. In this way, the material taught in a previous grade becomes a scaffold for what is to come in the next grade, thus providing a basis for facilitating a smooth transition from one grade to another.

When the students choose to take AP courses, however, they experience a significant shift in expectations in what had been otherwise a gradual process. At a later point they may experience a similar abrupt shift in expectations when they first enter post-secondary institutions. In both cases there is an overall increase in the rigour of the courses. Some examples of this increased rigour are evident in the difficulty of reading materials, increased homework expectations, expectations towards independency, testing rigor, and degree of complexity of material. As well, there may be significant changes in pedagogical processes and philosophies used in the delivery of the courses. At the outset, these abrupt changes create a very different environment with new challenges, which can be disconcerting to the students.

The concern felt by the individual is the result of the degree of difference between their new reality and what they had been used to previously. This initial fear or concern over the unknown is modified once the individual interacts with the new environment. The unknown now becomes a reality and the individual can begin to gather and process information and assess their position in their new environment. The participants expressed feelings of being
overwhelmed in the initial phases of both AP courses and also post-secondary courses. In response to the new expectations, the individual is required to recalibrate the structure of their lives in order to be successful. Possibly as a result of this recalibration, during which they became used to the new set of expectations, the feelings of concern seem to be replaced over time with feelings of greater comfort and confidence.

For the participants of this study there are in fact two significant transitions. The first transition occurs when the students move from regular stream to AP courses and the second occurs when they then progress to post-secondary education. These two transitions have common elements and consequently there is a similar repeated sequence of events that occurs, first in high school and then again in university. As a result, students who have had the AP background have knowledge gained from those experiences that other students may not possess. Upon entry to post-secondary education, rather than going through the recalibration process for the first time, AP students can use their past experiences to help them navigate through the new environment. For graduating high school students in general, however, their first significant transition may occur when they enter post-secondary education. For most high school students then, post-secondary environments are largely abstract constructs, whereas there is the potential that AP students have a better initial understanding of those same environments.

The sequence of events that occurs in these transitions appears to correspond to the general notion of social and academic integration proposed by Tinto in his model of post-secondary education (Tinto, 1975). The ability to be able to adjust and make the changes necessary to effect this integration is a measure of the self-efficacy of the individual. Antecedent conditions are seen by Tinto as important predictors of post-secondary success, but surprisingly, self-efficacy is not specified directly in his model and yet is a key variable in both the social and
academic integration of the student into the post-secondary environment. In this regard, it is possible that the challenging move into AP courses should also be considered as an antecedent condition in the following manner. As a result of making the jump to AP courses, the participants experienced a similar set of circumstances to which they will be exposed again at a later date during their transition to post-secondary education. The old adage that to be forewarned is to be forearmed has relevance here as the participants would have had a set of experiences that they could fall back on and from which they could gain knowledge. This might be a significant difference between themselves and many of the other students at post-secondary institutions who have no such experience on which to draw. This difference in experiential preparation can be seen in the following reflections. In the first case, Paula talks about framing the new experience of receiving lower marks.

Like I did get some marks in the AP course like 70 per cent. That was new to me. Like I was used to getting really high marks...like it is a learning experience right, and you aren’t just going to get a one hundred percent on everything. So you get used to getting some lower marks than you expect, which is a good preparation for university again, because you can’t just drop everything and think it is the end of the world if you get a poor mark.

The learning in this experience is evident and we can imagine that this may have provided her with an experiential framework to draw upon at university. Conversely, the reflections of April illustrate an alternative experiential background.

...the students that came from schools that didn’t have AP were over confident, which was what killed them. For example, they got a hundred per cent in their chemistry and they are like, “Oh yeah it’s going to be no problem, I aced the final exam.” (meanwhile
the) AP students would just kind of look at them and be like, “Yup! Good luck!” That’s all you could say to them was that it was going to be a shock and it was. It really was.

In this picture the students appear to have a reference framework that doesn’t include dealing with adverse conditions such as receiving marks lower than they anticipate. It is interesting to note the perspective of the AP student in this reflection. It indicates a very different attitude towards the value that is placed on high marks achieved in high school.

The findings illustrate considerable variation in the perceptions of these transitions. There appears to be a continuum that ranges from shock and awe on the one hand to feelings of familiarity and comfort on the other. One of the reasons for this variation appears to be how well previous experiences have prepared the individual for what is to come. In other words, if the degree of articulation between antecedent and subsequent experiences is poor it is reasonable to expect a high degree of concern. On the other hand if the degree of articulation is strong, then there should be a reduced level of concern. In this regard we should consider the articulation between regular high school courses and AP courses, regular high school courses and post-secondary courses, and AP courses and post-secondary courses.

In the participants’ high school, as in other high schools outside of the United States, there is not necessarily a good articulation between regular stream courses and AP courses. The gap between AP courses and courses based on the Manitoba curriculum should not be surprising, however, since the AP courses are based on curriculum outcomes that are independent of Canadian provincial curriculum documents. As well, the timeline for the AP course and the exam schedule is in harmony with the school year in the United States and not the school year in Canada. This requires a compression of the courses in the second semester as the exam is
scheduled for the early part of May, whereas the semester end in Manitoba is at the end of June. In some models of delivery, students who choose to do AP courses move into this stream in their Grade 9 year, with the AP courses completing what is essentially a four year programme of advanced study. In this way prerequisite material is covered and the courses taken in the earlier grades do provide a scaffold for the subsequent courses.

The participants’ high school adopted AP courses while remaining consistent with the existing Manitoba curriculum. This was done such that students could move freely between the two levels of course without serious gaps in the curriculum. As a result of remaining faithful to the Manitoba curriculum in Grades 9 and 10, the move into AP courses is fairly abrupt. Previously taught material does not necessarily provide a scaffold for the AP courses, both in content and in rigor. As a consequence of this abrupt change, students experience the cycle of events previously outlined.

The articulation between regular high school courses and first year university courses should be sound, but the findings suggest that this may not be the case, particularly with regard to science and math courses. One of the stated aims of science education in Manitoba is to:

- provide students with a proficiency in science that creates opportunities for them to pursue progressively higher levels of advanced study, prepares them for science-related occupations, and engages them in science-related activities appropriate to their interests and abilities (Manitoba Government, 2011, p. 2).

This stated goal is present in the current documents for high school science courses and while there is no clear statement to the effect that the courses will prepare the individual for post-secondary education, there is that implication. The development of the curriculum is not done in isolation, and during the review process, members of post-secondary institutions are included in
the review panel. In light of this, it is perhaps surprising and unfortunate to see evidence of a weakness in the articulation as perceived by the participants.

The following reflection of April illustrates the difference between her preparation in her AP courses for chemistry and calculus and other students in her class. In the process her account points to the potential gap in content articulation between the two levels of education.

When I got my first year chemistry outline of everything we were going to cover, there was an entire section on things we should know. I took this in my last two semesters of AP Chemistry but a whole bunch of people around me had hardly covered the list. I took calculus again in university and people were still hanging onto their high school pre-calculus and they would have to ask for help all the time.

The value of a good articulation between the two levels of education is revealed in the following comment made by Ed. There appears to be a note of comfort that is available as a result of this articulation.

Concerning classes, I didn’t feel intimidated at all, because I was familiar with the stuff from the AP experience. I thought as I looked at some of the worried faces that they had never heard of it before and we had been talking about it since Grade 11. It sure helped!

University entrance requirements are predicated on evidence of a high school education experience which measures the degree of competence that an individual has demonstrated while covering a body of information deemed necessary to enter first year university courses. Despite the representation of post-secondary faculty on the curriculum review panel and the implicit relationship between secondary and post-secondary education in the goals of the curriculum the transition to post-secondary education is by no means smooth for many students. There is evidence of a weeding out process that is part of the philosophy of certain post-secondary
faculties, notably those in Science, Math, and Engineering. This weeding out process has a long history (Seymour and Hewitt, 1997, p. 5) and appears to convey a distrust of the preparation that students receive at high school. Some faculty professors assume the role of gatekeeper in this weeding out process, and allow only the most capable to continue on to further studies in their discipline. In the following reflection, we can notice the implication that it is not the task of the professor to teach, but simply to select. It is also of some concern to note the expectation of the professor that first year students will already have the understanding of how to write in APA format, as this is not typically an inclusion in secondary education.

One of my profs was kind of insulting the students as soon as they got there and it was like, “You have no idea how to write and if you want to pass this course you are going to go home and you are going to pick up and learn how to write APA style and you are going to learn how to write and if you don’t you might as well give up now, because I know that high schools aren’t teaching you how to write.” (Susan)

In an environment such as this, many students who may show on paper that they should be prepared for a first year university course find out in a hurry that in fact they aren’t. This is morally troubling. If the end product of a high school education in Manitoba is a person who is not adequately prepared for university education, then it calls into question the integrity of the articulation of the two levels of education.

The articulation between first year post-secondary courses and AP courses provides a contrast to the previous discussion. Since the AP courses are built on a consensus of what constitutes a first year post-secondary course, there should indeed be considerable articulation between the two. A measure of the degree of articulation is suggested by the fact that numerous universities recognise the AP course as being equivalent to a first year course. Some universities
in the province of Manitoba do not accept this premise almost as if they have a distrust of the AP preparation in a similar fashion to the distrust that they have of high school preparation in general. In those universities that accept the validity of AP marks, students with high standing in AP courses are allowed to proceed on to second year courses without taking the first year required courses. This suggests the possibility of a common curriculum that is followed and a common body of knowledge that is at the heart of first year post-secondary courses. The perceptions of the participants were that there was indeed a high degree of articulation between their AP courses and their first year university courses. Alan gave an example of this when he talked about how his experience might have been different if he had not seen the material before.

Like if you had gone into first year university without AP, you get hit with a lot of new material and so you have a year of going, “Holy crap what is going on!” Whereas, since you took the material in high school you had your chance to do all your developing and you had a year of university where you had a chance to adjust to the new environment.

It’s a little bit easier. It’s not so much of a shock.

By stretching the students out in high school and including additional material over and above that indicated by the Manitoba curriculum, the courses appear to have closed the gap between the high school experiences of the participants and the required level of experience necessary for post-secondary courses.

The question of sound articulation between different levels of educational experience goes beyond course content. A dimension of greater importance concerns the self-efficacy of the individual. Within the context of the current study, Bandura (1997) believes that “perceived self-efficacy is a better predictor of intellectual performance than skills alone (p. 216). Without an accurate understanding of how to be successful in new environments and “without the personal
resources to select and structure their environments in ways that set a successful course,” (ibid p. 177), knowledge itself is of limited use. The implication is that people with similar cognitive abilities may have different levels of success dependent upon their levels of self-efficacy. This has obvious critical implications in the transition from secondary to post-secondary education. When initially faced with managing a new environment, people rely upon their data bank of information gathered from past experiences. Once the new environment is encountered and they begin to acquire information through new experiences, however, their success in navigating through the new environment is influenced moreso by their self-efficacy beliefs (Bandura, 1997). In considering the transition to post-secondary education then, it is of considerable importance that the individual has a wealth of relevant and accurate past experience to draw upon.

Individuals are born with few innate abilities beyond those essential to survival in the first days of their lives. In this state they have limited abilities to make choices about their world and impose those choices on their world, in other words their sense of personal agency has yet to be developed. This sense of personal agency develops as a result of them witnessing, experiencing, and engaging in experiences with their environment. Through these interactions, they begin to understand causation and eventually are able to recognise that they have a role to play in this causality in their own lives. Bandura (1997), the leading proponent of self-efficacy as a key determinant in human lives, states that self-efficacy is the belief “in one’s capabilities to organize and execute the courses of action required to produce given attainments.” (p. 3) Self-efficacy has no definitive boundaries. Developments and refinements in a person’s self-efficacy are ongoing throughout our lives as a result of continually experiencing new situations.

When students make the jump to AP courses they need to be encouraged and nurtured once they are enrolled. The jump up in academic expectation is quite frightening for the students
and helping them understand that they can be just as successful at this new level should be part of the ongoing philosophy of schools. It is generally recognised that the students are still developing the necessary skills to be successful beyond high school rather than already having acquired those skills. As such, the curriculum not only constitutes a body of information to be covered, but becomes a vehicle for the teacher to engage with the students in helping them recalibrate the skill and effort levels that will be required in order to be successful, not only in their new environment, but also in the environment beyond high school. This process is in keeping with the stated aims of the curricula in Manitoba as has been previously shown. There is a gradual process of skill development and mastery as challenges are encountered and overcome. The culmination of these actions for the participants is the challenge of the AP exam. According to their perceptions, this was the hardest academic challenge that the participants faced during their time at high school. In this reflection by Susan we can see how the knowledge of mastering this challenge had been incorporated into her schema of self-efficacy.

For example in biology at university when I did badly on the first mid-term I think back to AP Biology and I think “Hey! You know what? I got a five in AP Biology and even though the students around me have also taken AP Biology, I was a five and so if I could have done that good then my potential is there and I can do better on the final!” As a result of confronting and learning to deal with these challenges, the self-efficacy of the student has the opportunity to develop.

In contrast to the school environment, the general expectation of post-secondary institutions seems to be that the necessary level of self-efficacy is already in place rather than being a construct that is still under development. Evidence for this is provided by the general design of courses and the general lack of support given to students in their first year of post-
secondary education. Often first year courses are large and as a result are impersonal, which is in sharp contrast to what the students may have experienced in high school. Engagement is not easily encouraged in these environments unless the instructor makes a deliberate attempt to reach out to the students and engage with them in the learning process. Difficulty in engaging in the learning process is further compounded in some cases by the unwillingness of the instructor to assist. The dimensions of this environment, in which there is a sense of loss as a result of the lack of engagement, are illustrated in the words of April.

The thing is though I really missed that when I first went to university. I couldn’t talk to my professor. I couldn’t discuss anything. He would say something and so badly I wanted to elaborate on it or make a comment. I wasn’t getting that engagement where I could learn further, whereas with AP, I could ask a question, and it would be elaborated on. I could think about it and have an active discussion, which I think is one of the best ways to learn, but at university the prof just talks and if you have a question you might get lucky and it might be answered. My classes were 200 to 250 students so there was no chance. I managed to see my philosophy professor for a little bit after class but the profs also don’t have a lot of time either or they appear like they don’t have a lot of time. So that is something that I really missed and that was also a shock.

It is a recognised phenomenon in post-secondary environments that excellent teachers are not held in the same regard as excellent researchers. Tenure and promotion are rewards of research and not of teaching. Thus the post-secondary system promotes a philosophy that is not necessarily conducive to this engagement and is in sharp contrast to the pedagogical processes embedded in the high school system.
The provincial government sits on both sides of this transition. On the one hand they are responsible for the development of provincial curricula that provide the entrance level of education for post-secondary institutions. On the other hand they are the largest funder of post-secondary institutions in the province. Given that they straddle both sides of the transition, it is ironic that in many cases it seems that it is business as usual in post-secondary institutions and a high level of attrition still continues in some faculties. It is surprising that only recently the concept of self-efficacy and the dynamics of the classroom have been given consideration in the discussion concerning the integration of students into post-secondary environments (Tinto, 1997). Given that there appears to be a lack of understanding or acknowledgement of the need to continue with the development of the individual’s self-efficacy it is perhaps not surprising that there should be such high rates of attrition at post-secondary institutions.

A confounding issue in post-secondary education is the difficulty that apparently bright individuals have in negotiating the transition. The previous discussion potentially points to possible causes and may also suggest solutions. If an individual does not have an authentic sense of self-efficacy upon graduation from high school, it could lead to difficulties when transitioning to post-secondary education. In connection with this, Perry et al. (2001) suggest that many bright students are overly optimistic about their potential to succeed at university. In other words, their optimism is based upon experiences that have led to a sense of self-efficacy that is not authentic. In part, they suggest that the expectations of the high school students may not be based on relevant academic experience. They may base their optimism on their high school experience and may anticipate that university is going to be much like high school. This is a faulty schema that has been learned and reinforced through their experiences in the public school
system. When they are subsequently faced with the reality of the unanticipated challenges of university they may be at risk of academic failure. In the words of April:

The intelligent students are the ones who get hit the hardest, because they are the ones that can look at a paper for fifteen minutes before a test, memorize it all and ace the test. Then they go to university and expect the same thing and they get hit hard. Then you have the kids who don’t have the same capacity to do so and know that they have to take the time (to study)...when they get to university they do better often than the smart kids. The smart kids haven’t developed the skills they need. It’s really unfortunate when you see these highly intelligent people get low marks and you are wondering what is going on, and it is the study skills they failed to develop when they were in high school.

Bandura and Schunk (1981) showed that when successes are hard to come by, individuals with high efficacy have the capacity to persist in order to overcome the obstacle, whereas those of low efficacy are rapid quitters. A serious question that is posed by the current study is whether or not the perceived lack of challenge in regular curriculum instruction, together with the consequent lack of skill building and poor development of self-efficacy belief systems are contributing factors to the high levels of attrition at university.

Because of the challenges inherent in AP courses it seems that the participants were able to develop a reasonable and reliable sense of self-efficacy. The overwhelming majority (92%) of the participants in this study felt that the experiences that they had gained through their AP courses had provided them with a firm base for managing the rigors of post-secondary education. The perceptions of the participants correspond to findings of other students who reported having to work much harder in their AP courses than in other courses. The findings further suggest that much of this hard work was directed towards fundamental academic skills that would be
necessary in order to be successful at post-secondary levels of education, such as preparation for the exam, writing lab reports, studying, and reading the textbook (Sadler & Sonnert, 2010). In this way AP courses require a more honest assessment of factors that lead to success. Bandura (2000) suggests that the most effective way to create a strong sense of efficacy is through mastery experiences. The implication, however, is that at first the individual may fail at the skill but through a prolonged and sustained effort they may overcome the obstacle and in the process add to their schema of self-efficacy. Creating conditions of failure in today’s educational system is a difficult proposition and yet it is necessary if the students are to develop self-efficacy beliefs that are authentic.

It is not a given, however, that the students will possess this framework simply because they choose to take AP. The courses are just a framework on which to build activities that could develop the self-efficacy of the individual. For example, science courses are not just based on content, but should also contain lab components to build an understanding of the material and also develop lab skills necessary for post-secondary education. Some of the participants recalled encountering students who had also taken AP courses in which there was little or no lab experience. As a result, these students appeared to be deficient in skills when it came to the lab component of their chemistry course at university. Conversely, students who have not had an AP experience may be able to develop the self-efficacy framework necessary to make a successful transition to post-secondary education. The key determinant here is the rigor of that high school experience. Research shows that a rigorous high school experience appears to be the strongest predictor for a successful transition (Adelman, 2006). Further to this, the same research suggests that this rigor should be present in both the curriculum and in the process of the delivery of the material.
In all cases, including AP courses, students need to challenge themselves and be challenged by their instructors to go beyond their levels of comfort. In the process, they will confront possible failure and be able to learn from the experience. In this regard, AP courses culminate in a final exam challenge, which appeared to be of benefit to the participants. Again research shows that taking an AP course without taking the exam offers no particular benefit over taking a regular high school programme (Sadler & Sonnert, 2010). The act of studying for a difficult challenge is a key element to the development of the self-efficacy of the student. In the absence of these difficult exams, high school students in Manitoba only face two externally constructed exams; one for Math and one for English. The pressure of having an externally set exam covering a large body of information provides valuable experience to the individual before they move on to post-secondary education.

According to Bandura (1997), “educational practices should be gauged not only by the skills and knowledge they impart for present use, but also by what they do to children’s beliefs about their capabilities, which affects how they approach the future” (p. 176). In this regard concerns are raised by social critics that question the effectiveness of the public school system. Some believe that the system fails to prepare the youth adequately for the future by “undermining the very sense of personal efficacy needed for continued self development” (ibid. p. 175). There is an uncomfortable conflict between this position, the position taken in curriculum documents, and the statistics that point to the difficulty of transitions to post-secondary institutions. Rather than there being a large gap between the skills required for high school and those for post-secondary education, it appears that the effect of AP courses is to close the gap, thereby making the transition smoother. A note of caution here is in order. Simply
offering AP courses is not a panacea for solving this problem. It is apparent that the delivery model of the AP course and the efficacy of the teacher are also critical to this endeavour.

**Choices and Challenges**

The perceptions of the participants suggest that there were a number of factors, both extrinsic and intrinsic, which led to their decision to take AP courses. Extrinsic factors included inputs from family members, peers, and school personnel. While these factors were seen to be important, their function seems to be in support of the decision made by the participants rather than the deciding factor. The critical unanimous factor in the decision appears to be that the participants were internally motivated to look for challenge. In our lives, we tend to be either motivated towards or motivated away from experiences. There is a potential ambiguity in this decision as it may be that we feel we are motivated towards an action, when in fact we are motivated away from something else. This bi-directional system of motivation “toward” and “away from” is inherent in the participants’ decision to enrol in AP courses.

In consideration of the motivation towards a more challenging environment this is consistent with individuals who have future based aspirations (Bandura, 1991). All of the participants felt that being involved in a more rigorous program would help them be successful in university. In other words, their decision to take AP courses was motivated by the thought of a reward to be attained in the future. Bandura (1977) explained that “cognitive representations of future outcomes function as current motivations of behaviour. Many of the things we do are designed to gain anticipated benefits and to avert future difficulties” (p. 161). This motivational construct is reflected in the words of one of the participants.

I think at that point I just wanted the challenge, something to make myself work harder because I felt that I was cruising and wasn’t putting a lot of effort into school at that point and it bothered me. (Trish)
This future orientation was instrumental in the participants’ decision to take advantage of an academic challenge that went beyond that of the typical high school experience. As John recalled, “It was a very base level for all students and it was difficult to go above and beyond that.”

The future based ethos of the participants that is evident in their perceptions also lends support to the work of Zimbardo and Boyd (1999) and the concept of “Time Perspectives”. Their work describes the differences in the way that individuals construct time. In their research they find in general that people who have a strong future orientation are often found to be “highly organised, ambitious, goal seekers who felt pressed by time, but were willing to sacrifice present enjoyment to achieve their career objectives” (p. 1281). In this description we can see an important element in the makeup of these individuals, and that is the ability to delay gratification in order to take care of immediate responsibilities. This line of research also suggests that there is often a significant social cost that is attached to this future based goal seeking ethos. By having no time to waste hanging out with friends or making them in the first place, these individuals may pay the price in terms of social development. In a nutshell then we can see the consistency between this research and the general makeup of high achieving goal seeking students such as those in this study.

The participants also revealed an “away from” dimension in their motivation to take AP courses. In this regard we need to consider the idea that they were motivated away from certain conditions that might have existed in their previous classes. Participants generally expressed the sentiment that they had never really been challenged in their regular classes. In addition, some participants suggested that they had been bullied because of their abilities and that as a result they had remained fairly quiet in class in case they were exposed to adverse treatment.
It is a little bit of a refuge for the smart person because you kind of get tormented by the not so smart kids. I was bullied quite a bit in high school. I would probably have switched to a different school if it wasn’t for AP. I was almost going to switch to another high school because it was smaller and there wasn’t as much of a divide and there weren’t as many cliques. There were a lot of cliques at my high school and it could be rough for somebody who didn’t have a clique. (AP) was a refuge. It made it a lot easier to come to school because it was pretty rough in my first year of high school. I really didn’t like high school much at all, but I liked AP. (David)

Moving in to AP classes seemed to be a welcome relief for many of the participants as they now encountered an environment where behaviours that they had repressed were welcomed. A number of the participants described the AP classes as a haven for them while they were in high school. In a continuation of the same theme, they expressed that involvement in AP classes had been what had made their high school experience something to be remembered.

The notion of time as a construct and as a resource to be used is of great importance in this discussion. The very nature of AP programs increases the pressure on this resource for students as they have to commit more of the precious resource of time to their studies in order to be successful. It is important to note here that the model chosen by schools for the implementation of AP courses can either exacerbate or ameliorate these time concerns. The study gathered limited information on this aspect and will therefore only address the model used by the high school in question. In the participants’ high school each AP subject involves taking three high school courses rather than the typical two. By extending the time in which to deliver the course material, the model allows for a more relaxed and thorough delivery. In this way, not only can the necessary academic skills can be developed through the delivery of the course
content, but time is also available for the development of social and emotional skills that are critical to future success.

Once involved in the AP program, all of the participants encountered challenges. Perhaps the biggest of all these challenges was balancing their time between academics and just being a teenager. The question of continued motivation is a challenge both for the student and the instructor. Bandura (1977) provides an insight into this question. He states that:

self motivation is best maintained by explicit proximate sub-goals that are instrumental in achieving larger future ones. Sub-goals help to create present inducements for action, while sub-goal attainments provide the self satisfactions that reinforce and sustain one’s efforts along the way. (p. 162).

At the same time as the students had a future focus, they were very much grounded in the present. Those that had a clear goal in mind seemed to have the construct that the events of each day would eventually lead them to their ultimate goal. Those that did not have a clear goal beyond going to university also seemed to have the same schema. This is in keeping with Bandura’s notion of proximate sub-goals. Goals that are set too far in the future are not effective motivators for the present. During the journey they experienced hardships but their strong commitment to their future goals, either broad or specific, together with their developing self-efficacy skills enabled them to have the resilience to continue on their path.

Supports and Barriers

The final factors that emerged as being integral in the journey of the participants appear to be the learning and instructional environments encountered at high school and at post-secondary institutions. The importance of these components to the participants was reflected by the large number of references made to them, both within and between transcripts. In these
reflections it is apparent that elements encountered in these learning environments were found by
the participants to either help or hinder their progress.

This research spans the final stages of high school and the first stages of post-secondary
education. In addition to the challenges of the transition to university, the students are
negotiating other significant challenges as they also transition from adolescence to adulthood. In
this process they are moving towards independence and autonomy. Paradoxically this need to
move towards independence comes at a time when they need the care and attention of others to
assist in the transition. An important source of support during this transitional period is provided
by efficacious adults in learning environments. In discussing the implications of self-efficacy in
schools Pajares (2000) states:

parents and teachers who provide children with challenging tasks and meaningful
activities that can be mastered, and who chaperone these efforts with support and
encouragement, help ensure the development of a robust sense of self-confidence and of
self-worth. Beliefs of personal competence and of self-worth ultimately become habits of
thinking that are developed like any habit of conduct, and teachers are influential in
helping students to develop the "self-belief habits" that will serve them throughout their
lives.

The findings suggest that the structures of the learning environments and the behaviours of the
instructors in those environments may or may not acknowledge these challenges and in the
process these structures and behaviours may significantly impact the journey of the individual.

In a study of the reasons why first year post-secondary students switch from science,
math, and engineering majors, it was found that 40% of those surveyed reported problems related
to high school preparation, whether they switched majors or not (Seymour & Hewitt, 1997). In
general this under-preparation appears to have two dimensions: deficiencies in curriculum content and subject depth, and failure to acquire appropriate study skills, habits, and attitudes.

Findings from this study revealed a common story of high school where students:

- always found mathematics and science easy, ‘scored’ high grades in these subjects with little effort, and were accustomed to praise from teachers, family and peers. Rarely had their teachers made appropriate demands on their abilities. Achievement targets had been set well below their capability, and they had been neither stretched nor challenged. They did little homework, or did it hurriedly at the last minute, and were often left to their own devices while teachers worked with the rest of the class (p. 84).

This chilling picture appears to be reinforced by the findings of the current study. The participants reported finding their regular high school classes as lacking true challenge. Upon reaching their post-secondary institution, they reported seeing many students who were confident based on their high school experience, but in reality were underprepared for the new experience. Given that the “executive” decision making capacity of the adolescent brain is not developed and that these individuals therefore struggle with associating consequences to their actions, it is perhaps not surprising that individuals should develop a false sense of their abilities. Upon reaching university and encountering an environment in which they are autonomous, where no-one takes attendance, checks to see whether you are doing your work, cares about you, and holds you accountable in the process, it is small wonder that there is a significant attrition rate.

What is most distressing about the attrition at post-secondary institutions is that it appears to be confounded by high school marks. Individuals with good high school marks, suggesting competent abilities, are also involved in the attrition process. If the marks are obtained in an environment similar to those described above then they may have little value going forward.
The words of the following participant describe this situation as well anyone.

You start off with a lot of people who are chemistry majors and biochemistry majors and math majors and they get so downtrodden in the first couple of weeks because they have never learned to read the textbook for themselves and they fail the first two tests and they drop out of the program completely. They go there with these big dreams because they were top of their class and they have never seen AP or difficult classes and they fail their first chemistry test and they fail their first calculus test because they didn’t have calc in high school and they didn’t have a decent chemistry teacher in high school so then they think they can’t do it. I would say that about 80 per cent of the people, who were chemistry majors when they started in the first year, dropped out [changed majors]...it’s hard for them. Like their dreams are being crushed number one and now they can’t even get through their first semester as a chemistry major!” (Beth)

It seems as though the students, in not being prepared for the reality of university, have been set up to experience a process that appears to be psychologically devastating. It is difficult to accept this situation as the status quo and not feel as though it is an issue that should be addressed. Conversely, this reflection also points to the value that the individual sees in her AP experience.

The participants were motivated to take AP courses both by the lack of challenge in their regular courses and also by the opportunity of challenge that was afforded by the AP courses. It is interesting to note that some of the participants felt uncertain of their abilities going into AP, even though they had performed well in previous grades. Some of their comments revealed their understanding that they really hadn’t done that much to earn their grades.
I was just so unsure of myself. I was deceived into thinking I was going to be great at it. I was used to getting one hundred per cent, but I was spending fifteen minutes looking at the paper before the test. The first couple of tests (in AP) were definitely a reality check. I put in a good amount of effort, but I realised that what I had been doing was not enough and I adjusted to it. At first it was horrible, it really was, but it became normal and it became no big deal. (April)

Academic self-beliefs are built primarily as a result of mastery experiences. Authenticity of these experiences is critical, since false notions of abilities can result from experiences that lack real challenge. The danger of creating this artificial self-concept is that no real resilience is developed and consequently the individual does not stand up to well to challenge and adversity. Erick Erikson (1959/1980) put it this way:

Children cannot be fooled by empty praise and condescending encouragement. They may have to accept artificial bolstering of their self-esteem in lieu of something better, but what I call their “accruing ego identity” gains real strength only from wholehearted and consistent recognition of real accomplishment, that is, achievement that has meaning in their culture. (p. 95).

With this in mind, the participants seemed a little apprehensive about the AP courses since it was perceived to provide a greater challenge. Although this study is limited in its scope, there is at least a possibility that the experiences of the participants in this study are not dissimilar to those of other high school students throughout the province. In this event, it is perhaps not surprising that graduating high school students arrive at university with unreasonable expectations concerning their abilities. Observations of their peers at their post-secondary
institution lend support to the notion that many high school students arrive at university with the expectation that it will be business as usual and similar to high school.

On the other side of this transition is a potentially hostile post-secondary environment which is in sharp contrast to a general high school experience. First year courses appear to be particularly difficult as the transition is not gradual, but rather abrupt. In an environment that is entirely new, there are few structures in place that are designed to help the student. Gone are the high school classes with familiar surroundings, peers, teachers, and expectations. In their place are often large impersonal classes where there is little engagement with the instructor. Lecture style presentations replace discussions and co-operative learning is often replaced with isolated endeavour. These changes in pedagogical structure, together with significant increases in rigor, create a situation that can be very stressful for a student who is used to a learning environment at high school that is far more personal and supportive.

Recently in the United States there has been a growing concern over the levels of attrition in post-secondary education, particularly in the areas of science, math, and engineering. As a result, research has been conducted to examine the possible causes of such attrition. In one such study of the factors affecting choices of female majors in science, mathematics, and engineering, Manis, Sloat, Thomas, and Davis (1989) reported on the experiences of students that had dampened their enthusiasm for these subjects and undermined their motivation to continue. Characteristics of the classes that led to these perceptions were:

- poor teaching or organization of material; hard or confusing material, combined with loss of confidence in their ability to do science; cut-throat competition in assessment systems geared more to weeding out than to encouraging interested students; dull subject
matter; grading systems that did not reflect what students felt they had accomplished (as cited in Seymour & Hewitt, 1997, p. 35).

Unfortunately other studies (National Academy of Sciences, 1987; The Scientific Research Society, 1989; Seymour & Hewitt, 1997) support these findings.

There appears to be a fundamental belief system of certain faculties that the problems of attrition are external to the faculty. They believe that the material is inherently difficult and that only a certain elite percentage of students will be able to handle the material. This is in contrast to the more democratic philosophy of high school, which adopts the position of being able to clarify material in order to make it possible to understand. (Seymour & Hewitt, 1997, p. 10).

Consequently, some faculty believe that their role is one of selection rather than education. This is done in order to correct wrong choices that students may have made in selecting their course of study (National Academy of Sciences, 1987; Seymour Hewitt, 1997). In line with this philosophy is the idea that in order to be kind to the students the faculty needs to weed out those that have made the wrong decision.

These findings highlight some of the possible features of post-secondary environments that students must navigate in order to continue on their path. The reflections of the participants in the current study lend support to these previous findings.

I had a professor tell us that fifty per cent would drop the class and twenty five per cent would fail it. If you fail your first exam either fix what you are doing or you should probably drop the class. (Colin)

The message in this reflection does not convey any assurance of support but simply tells the students to make a better choice for themselves. Further evidence that the philosophy of selection as opposed to instruction still exists is present in the recollections of the participants.
Familiar statements such as “look to your left and look to your right” are still trotted out regularly by instructors like a mantra. Attitudes that the instructor is there to convey material rather than teach material are still present.

Another area of concern for the participants was the question of congruence between course content and examined material. Again, this calls into question the integrity of the learning environment. Generally this congruence was something that the students could count on at high school but seems to be elusive at post-secondary institutions. A number of participants recalled uncertainty over test material and the intentions of the instructor in the process. In some cases the material had never been covered in the lectures and was also not available in the text.

For Ecology especially, I thought I understood the material and I would study quite well in my opinion and I would get to the test and would get a 71 or something. There were some aspects where I couldn’t believe that I could make that mistake, and there were a few questions that I didn’t know where they came from because we hadn’t done them at any point in the class and they were not in the textbook. At that point of having new material and being uncertain of what was on the test and of what was expected of us and what not, it was quite stressful. (Brian)

In another case, two sections of a course were taught by two different instructors with two different sets of content, only to be tested as a unified whole. Old tests that did not reflect current material covered by the instructor were still used. Here is another example that caused obvious concern for the individual.

The Organic Chemistry course was fairly well laid out it’s just that he didn’t write the test for that one. The other professor did because there were two different slots for that
course. It seemed to me that the other professor (who wrote the exam) didn’t seem to like students. (Brian)

These examples suggest an environment that is not particularly supportive of the students.

The grading systems used in post-secondary institutions have been shown to present problems to students (Manis et al, 1989; Seymour & Hewitt, 1997). Curved marking schemes encourage a cut-throat competitive environment that does not promote co-operative learning and have the potential to select as much on psychological makeup as they does on academic ability (Seymour & Hewitt, 1997). This environment would have required the participants to have made significant adjustments since it would have been a far cry from what they had been accustomed to at high school. At high school, they would have competed against a body of information, rather than each other. Theoretically they could have been in a class of exceptional students all of which could have received high marks. Since they were not competing with each other but only with themselves, co-operation and helping others would not have been discouraged. One participant, who attended a large provincial university in which more than one section of course was taught, explained that each course had its own separate curve and therefore individuals in another section were not in direct competition with them. The impact of this was that the individual studied with, and helped other students, only if they were in a different class and not their direct competition. People in the individual’s class were seen as threats as is shown in the reflection of Paula.

Especially in university there are some students who are getting their “A+” and they will not help anyone on their way. They want to get that one grade. You do see that and you do see that they don’t have a group of friends.
The potential cutthroat nature of the learning environment fostered by curve marking systems inherent in post-secondary environments presents a tough lesson for a young person and assumes that they are psychologically prepared to handle the experience. Again, Seymour and Hewitt’s findings suggest that this is not the case.

In addition, curved marking schemes do not necessarily reflect the achievement of the individual. In high school, the students would have been exposed to only two standardized exams; those being in Grade 12 Math and English. All other tests would have been teacher based, and would have reflected the content of the course. The participants expressed real concern over the testing in certain areas of their post-secondary experience. In one faculty for example, the class average was below a passing mark in all but one of four mid-terms and two final exams. The participants did not feel that the exams were particularly difficult in terms of material. Instead they felt that a degree of difficulty had been built in to the exams because of the large amount of work required and the difficult semantics of the questions. Comments from the participants revealed the difficulty they had with these situations, which was tempered perhaps by their position on the grade curve.

Somewhere between their regular high school programs, with what was perceived by the participants as a lack of challenge, and their first year courses at post-secondary-institutions, which were perceived by the participants as being potentially hazardous, lies the AP courses. As they are offered in a high school context, there appears to be the understanding that the student is still very much a work in progress and not a finished product. Consequently the individuals are provided with the opportunity to stretch themselves above and beyond the challenge of regular high school courses under the supervision of an instructor who provides support for their development. Under the supervision of an efficacious teacher, the students encounter and master
challenging material and in the process they appear to gain a more realistic sense of the difficulties that await them at post-secondary levels of education. As a result, instead of operating with a false optimism about their abilities based upon their high school experience, they appear to have a healthy set of skills and self beliefs that enable them to handle the challenges that they encountered at their post-secondary institution. Instead of realising that their high school preparation was perhaps faulty, they recognise that they are in fact well prepared for the challenge.

Analysis of the participants’ reflections of their AP courses generally reveals a constructive environment in which significant development occurred. In the delivery model employed by the participants’ high school, for each AP subject taken, the students mostly interact with one teacher over a period of three semesters. During this time the students and the instructor can develop a sense of familiarity and community. The close connections that are forged between the students and also between the students and the instructor are very important. As John stated: “The instructor was very good about getting to know all of us. We were treated as a group. We all got to know each other and got to know the instructor.” This sense of community appears to be an important element in the motivation and development of the individual as is demonstrated in the following reflection.

You are getting more personal attention and you are in a smaller group and a great learning environment and you feel like reaching higher I guess. It makes a difference when you get praise from your teachers and you know you are on the right track. It is definitely harder in large classes. (Rachel)

The findings suggest a sharp contrast between this environment and that of first year university courses. In some disciplines, first year classes are often large and impersonal and as a
result there is a great potential for anonymity. This can be very stressful for a student who is used to a more familiar learning environment at high school. Perhaps this is why first year courses appear to create the most problems. Once past this “selection” year, the classes dwindle in size and the students can potentially recapture that feeling of familiarity which nurtured them in high school and which they lost when transitioning to post-secondary education. As Saraid recalled, “There was more a sense of community in AP. You knew your teacher better than you had known teachers before. It seemed more like a partnership. That also happens in the smaller university classes.” Given their potentially hazardous nature, it is difficult to argue with the criticism that these structures act more to select students than they do to educate students.

Consider the following reflection.

Like I knew if I needed some help I knew which students to ask. You know the people in your classroom well enough and you know your teacher well enough if you had questions. That all changes in university because you are sitting in a class of hundreds of students. You don’t really know any of the students so it is quite intimidating. Since you are just one of hundreds of students you don’t really feel like going up to the professor because you don’t really know who he is. Some of the professors introduced themselves, but some of them just get right into the course and they don’t care too much. (Rachel)

There appear to be a number of assumptions made in post-secondary environments with regard to the abilities of the incoming students. Not least among these assumptions is that the students will possess the psychological framework necessary to handle the events that have been described. The following participant talked of his reaction to the “selection” practices he endured at university.
It didn’t devastate me because I was always one of the higher numbers. Like it made me extremely angry with the professors because, even though I am in competition with these people and I want to do better than them, I hate to see people being put down that much and that’s not what it should be. Like this is higher learning, this is not higher putting down. It shouldn’t be about, “We want you to fail and you shouldn’t be in this class. If you are below a certain mark don’t even bother working hard. Spend time on other courses because you are not going to pass this one.” That is not a motivating environment. (Alan)

One is left wondering about the validity of processes that create such conflict in an individual. One is also left to consider that the selection process followed at post-secondary institutions may be more on the basis of psychological profile than it is on academic ability, in which case, does it do a disservice to the individuals and the country as a whole.

**Revisiting Assumptions from Chapter One**

In the context of the analysis of the findings, it is useful to revisit the three assumptions underlying this study that were stated in Chapter One. These assumptions, presented at the inception of this study, were based on the researcher’s background and professional experience.

The first assumption underlying the research was that high school coursework does not necessarily provide adequate preparation for an individual entering post-secondary education. This assumption held true according to the first finding. Although the overwhelming majority of the participants in this study expressed that their transition to post-secondary education had been successful, it was apparent in their perceptions that they had witnessed many examples of students who did not have the same experience.
The second assumption proposed that as a result of their high school experiences, there was the potential for graduating students to have a less than realistic sense of their academic abilities, which could lead to potential difficulties in post-secondary environments. This assumption also turned out to be true based on the primary findings of this study. Again, the participants’ perceptions indicate that they had observed many students who had felt optimistic and ready for their post-secondary experience only to find out in short order that they were less than adequately prepared. Recent research concerning brain development supports the contention that there is every reason to expect this phenomenon to occur in the absence of an experience at high school that does not develop the behavioural characteristics necessary for success at post-secondary education. Managing their new found autonomy in post-secondary environments without a good sense of self-efficacy seems to be a dangerous combination for students.

The third assumption was that the preparation received in AP courses should have contributed to a smooth and successful transition. In large part this assumption was found to be true. There were one or two exceptions where the participants felt that they had not sufficiently developed their study skills or a capacity to ask for help, both of which are critical for success. Critics of the efficacy of AP would suggest that the majority of the participants would be successful even if they had not taken AP. In this argument they point to the personal characteristics of the students who apply for AP as being a key determinant in their success. This argument appears to be an oversimplification of the situation since there were a number of observations of students who were capable but who had lacked the AP preparation and as a result had struggled during the transition. In the end it appears that the key ingredient in the preparation at high school appears to be the rigour of the learning experience.
Chapter Summary

This chapter has portrayed the experiences of a sample of university students who had taken AP courses at high school. In summary, the prior discussion illustrates the multifaceted and complex nature of the transition process from high school to post-secondary education. The discussion reveals various factors that could impact the transition in either a positive or a negative fashion. In the process, the analysis serves to illuminate possible dimensions of both high school and post-secondary environments that could help to explain the high levels of attrition that are currently experienced in post-secondary institutions.

The analysis involves the final stage of exploring the data accumulated in this study. Data collection and analysis continued in an iterative process that involved continual refinement of the structure of coding schemes used to make sense out of the large volume of material. From the significant patterns that were observed, a framework was constructed around which the major themes could be built. These major themes resemble icebergs in that a number of ideas and concepts are associated with each theme. Each theme addresses a significant aspect of the research findings. While the findings were explored in detail in the previous chapter, this analysis attempts to determine what the findings mean in the context of the study.

A degree of caution is in order when considering the analysis of the findings covered in this study. In the first place, the research sample was small, comprising interview data from only twelve interviews. In defence of this limitation, the sample size provided sufficient data to demonstrate data saturation. Secondly, the participants in this study had taken AP courses and so the transition to post-secondary education is seen through the eyes of individuals who have experienced AP programs. Thus the perception of those who graduated from high school without taking AP courses is not directly presented. This limitation is tempered, however, by the
knowledge that the participants had taken other high school courses as part of the necessary graduation requirements from high school. As well, the recollections of the participants do allow for some comparison as they were able to reflect on the differences between their AP courses and regular courses. Similarly the recollections of the participants contain observations of the transition to post-secondary education made by other students who may not have taken AP courses. Finally, as has been discussed in the analysis, the model of AP course delivery is not universal. As such, the findings represent the perceptions of the model chosen by the high school at which the participants took their AP courses. For these reasons it must be stressed that the implications that can be drawn are specific to the experiences of the sample group under study, although the themes presented here do point the way for further analysis.

In all research the human factor brings necessary creativity but also preconceptions that could influence the direction of the research. As such, being human is a researcher’s greatest asset while at the same time it presents a fundamental liability. The standard objection of qualitative research is that the analysis of the phenomenon is based on anecdotal evidence. I recognise the subjective nature of the claims made regarding the meaning of the data and support the validity of the argument of Seymour & Hewitt (1997) when they stated:

Accounts gathered and analyzed in a systematic manner allow the investigator to discover things that cannot easily be discovered by any other means. In complex human affairs, noticing the patterns in the independent amounts of expert witnesses plays the same role as laboratory observations in the formation of hypotheses (p. 396).

Aside from the potential biases involved in acting as an instrument in the research, I acknowledge possible additional bias in analyzing the findings because I have been involved in the development and implementation of the AP program in question. To help minimize this
limitation throughout the process of data collection and data analysis I engaged in ongoing
critical reflection through journaling and discussions with colleagues on both sides of the
transition. Deliberate attempts were made to understand the data from multiple perspectives and
yet the story told in the analysis is open to the possibility of a different interpretation.
Conclusions

Introduction

The purpose of this case study was to explore the role played by Advanced Placement courses in the transition of students from secondary to post-secondary education. The conclusions from this study are derived from the findings to the research questions and consequently address three main areas: a) making successful transitions to post-secondary education; b) the development of self-efficacy and resilience; and c) the critical nature of the learning environment in the transitional process. The following discussion is based on the main findings that have been drawn from the research. At the conclusion of this chapter is a section involving the researcher’s recommendations followed by a final reflection on this study.

Making Successful Transitions to Post-Secondary Education

The first major finding of the research is that all of the students in this study indicated that they had made a smooth and successful transition from secondary to post-secondary education. They attributed this smooth transition to the fact that the AP courses had prepared them well for the challenges of post-secondary education, both in terms of academic preparation but also in terms of developed self-efficacy and resilience. At the same time that the participants were feeling secure in the transition process, they were aware that this was not the case for other students. This comparison also confirmed for them the benefits of the preparation that they had received. A conclusion that can be drawn from this finding is that high school students who are seriously contemplating attending post-secondary institutions would benefit from the experience of having taken some AP courses. The success of the participants in their AP courses at high school indicates that the challenges of a first year post-secondary course are within the capabilities of some high school students.
Completion of high school courses may be necessary for entry to post-secondary institutions but they are not necessarily sufficient. Regardless of the curriculum that is followed in high school, if the courses do not contain sufficient elements of rigour then they can leave the student vulnerable at the next level. In this regard, the transition from regular stream courses to AP courses seems to require the students to recalibrate their understanding of the effort that is necessary to be successful. Unfortunately for a lot of high school, this recalibration does not occur until they arrive at post-secondary institutions. The rigor that is built into these courses through the extended breadth and depth of content, together with the challenge of a comprehensive externally set exam provide the opportunity for the students to develop authentic self-efficacy beliefs and resilience, both of which are necessary in order to withstand the challenges of post-secondary environments.

The Development of Self-Efficacy and Resilience

Of equal, if not greater, importance to academic competence in the integration of students into post-secondary environments is the possession of authentic self-efficacy beliefs and resilience. One of the struggles of post-secondary education for all students is how to deal with their new found sense of autonomy. As well, they need to be able to withstand an academic environment that can be hostile in comparison to the relative safety they enjoyed at high school. In both instances, self-efficacy skills and resilience are essential. All of the participants expressed that they felt that their preparation through AP courses had helped them build resilience and authentic self-efficacy beliefs. A conclusion that can be drawn from this is that it appears that the structure of AP courses, together with the model in which they are delivered, provides the opportunity for the students to develop these attributes.
A related conclusion is that programs that do not develop self-efficacy skills and build resiliency ultimately leave the students vulnerable to academic failure. Progressing to university with an overly optimistic set of expectations based on less than accurate information has been shown to be a leading factor that contributes to attrition at university. Some students have not had to work to develop coping strategies and as a result there is no inner strength for them to draw on when they need it. As a consequence of their preparation they have difficulty meeting the challenge of university. Ironically it appears that the successes that some students achieve at high school lead to subsequent failure. Recognition of this phenomenon should be cause for concern to all levels of education.

The Critical Nature of the Learning Environment in the Transitional Process

The third major finding of this study is perhaps the most critical since it underlies both of the previous findings. It was apparent from the perceptions of the participants that the dynamics of their learning environments had been, and continued to be critical to their success. Learning environments are multi-dimensional and a key dynamic appears to be the development of a sense of belonging to a learning community. The participants all experienced the presence, loss, and reoccurrence of this sense of belonging in their journey. Initially it was built in high school only to be lost in the first year of university. This loss of familiarity is a key element in understanding why the transition to university is so hazardous. The participants expressed the importance of being known as a person in an engaging learning environment. In contrast, they all expressed some regret over the anonymity that occurs in large, impersonal university classes.

The importance of this component to the participants was illustrated by the number of references to it both within and between transcripts. In the delivery model studied, for each AP course taken, the students interact with one teacher over a period of three semesters. During this
time the students and the instructor can develop a sense of familiarity and community. The close connections that are forged between the students and also between the students and the instructor are very important. As John stated:

“The instructor was very good about getting to know all of us. We were treated as a group. We all got to know each other and got to know the instructor.” Being validated as an individual is a powerful motivator.

In comparison, there is a great potential for anonymity in first year post-secondary classes, which are often large and impersonal. This can be very stressful for a student who is used to a more familiar learning environment at high school. Perhaps this is why first year courses appear to create the most problems. Once past this year, the classes dwindle in size and the students can potentially recapture that feeling of familiarity which nurtured them in high school and which they lost when coming to their post-secondary institution.

Perhaps the strongest safeguard against this loss of familiarity at post-secondary institutions is to have developed resiliency. This resilient attitude, coupled with a healthy set of self-efficacy skills and beliefs based on accurate information, should go a long way towards helping the students navigate through this challenging period. It is perhaps a sad commentary that students might need to have developed strategies that enable them to not take as a personal attack the displays of indifference exhibited by faculty as part of the entrenched weed-out objectives of some faculties (Seymour & Hewitt, 1997, p. 394). Post-secondary institutions should also look for solutions to this problem. Providing more supports for first year students, together with altering delivery methods for courses could be examined. Weaver and Jiang (2005, p.572) suggest that: “large classes foster anonymity, enable students to seat themselves at the periphery of the classroom, and thereby facilitate the strategic withdrawal of the majority”. At
the same time, it is well documented that students who actively participate in the learning process learn more than those that do not (ibid, p. 570). Learning situations that recognise the power of connection and community should be developed and encouraged.

The conclusion is that the dynamics of the learning environment can determine the success or failure of the students. Large impersonal classes allow the strategic withdrawal for substantial numbers of students. At the same time as the students arrive in these largely impersonal settings, they are still at a developmental stage in which they would benefit from interventions from efficacious, caring adults. An environment that fosters disengagement and does not acknowledge that the students are still in a developmental stage, coupled with the inability of the students to handle their new found autonomy creates a recipe for disaster for many. The importance of this aspect cannot be overstated. Both the knowledge and the people components of the learning environment are equally important and need to be considered.

**Recommendations**

The following recommendations are based on the findings, analysis and conclusions of this study. There are multiple factors operating in a dynamic landscape that influence the transition from secondary to post-secondary education. Although there are similarities in these landscapes they are also unique. As such, the recommendations offered here should be considered as starting points in the discussion concerning these transitions. The recommendations at this stage are general and are for: (a) secondary and post-secondary institutions, and (b) for further research.

**Recommendations for secondary and post-secondary institutions.** One of the participants suggested that high schools should become a little more like university and that universities should become a little more like high school. It is an interesting observation and one
that reflects that there are concerns that need to be addressed on both sides of the transition. Another participant felt that it would be easier to make the necessary changes at high school since it was difficult to do at university. In these two positions we can see what is perhaps necessary and also the difficulty in effecting change. Adopting the position that the problem is external to either side of the transition will not lead to necessary and effective changes.

1. Both secondary and post-secondary institutions should employ strategies to prevent alienation and strategic withdrawal through anonymity in the classroom and which develop a sense of belonging to a learning community.

2. Secondary and post-secondary institutions should evaluate the expertise of their instructors in building a student centered learning environment. Professional development of all instructors should include an understanding of human development. Evidence of improved pedagogical practices and improved retention of students could be tied to reward and promotion at post-secondary institutions and should be considered an ongoing part of teacher professional development at both secondary and post-secondary levels of education.

3. It would be helpful if secondary and post-secondary institutions developed joint committees to foster understanding between the two levels of education. Promoting articulation and partnership in the common goal of effective transition to university needs to be encouraged. An “us versus them” mentality does not solve the problem.

4. Post-secondary institutions should be encouraged to move away from the philosophy and practice of “selection” to the philosophy and practice of “teaching”.

5. High schools need to recognise the potential for poor articulation between high school course experiences and the subsequent course experiences at post-secondary institutions.
Programs that promote articulation in terms of content but also in terms of developing the personal efficacy beliefs and resilience need to be encouraged. Authentic self-efficacy beliefs require the student to engage in a sustained effort to overcome adversity. Real challenges resembling those that will be encountered at post-secondary institutions should be incorporated into high school programmes.

**Recommendations for further research.** Based on the limitations of this study, and to correct for researcher bias, further research needs to be carried out to create a larger data base of information in order to gain a more comprehensive understanding of the transition to university. At this point qualitative research is needed in order to hear the voices of the individuals involved.

1. It would be helpful to talk to students who have not taken AP courses.
2. As well, students from schools of different sizes and locations should be studied for comparison.
3. The different models of delivery for AP courses need to be studied by examining the perceptions of students involved in the same program in other schools in the province.
4. The dynamics of learning environments in general should be studied. The concepts of anonymity, strategic withdrawal, familiarity, and engagement are critical. Knowledge of constructs that promote engaging learning communities could provide valuable information for both secondary and post-secondary institutions.
5. The development of authentic self-efficacy beliefs is of critical importance. Knowledge of the development of these beliefs in current high school settings is necessary.
6. Conversely, conditions that lead to unreasonable optimism in high school graduates need to be explored.
7. Although the sample was limited, the participants generally displayed strong future orientations as well as being well engaged in the present. The work of Zimbardo & Boyd (2008) seems to be supported in the findings of the current research. Given the potential importance of this construct, it should be researched in larger high school populations.

**Final Comments**

Transitions in life are not easily negotiated. For graduating students from high school, the transition to post-secondary education is an important stage in their life trajectory. There is ample evidence to suggest that the transition is not easy. The study has highlighted factors that have been important to a sample of students who have made a successful transition to post-secondary education. By building on our understanding of what works, it is my belief that models of success can be developed. In turn, these research-based models could be used to inform structures and processes in both high school and post-secondary environments that could be developed to improve this transition. The end result could be a reduction in attrition rates at post-secondary institutions along with the attendant loss of human capital.

The study was exploratory in nature and to this end the questions were open ended rather than prescriptive. This allowed the participants to explore their journey from secondary to post-secondary education without constraints imposed by the preconceptions of the researcher. During the research, additional themes emerged beyond the original scope of the research and in the final analysis the research has presented as many new questions as it has answered. AP courses appear to provide a solid platform for students as they transition from secondary to post-secondary education. The availability of these courses, however, is not universal which creates a potential point of conflict. In a post-secondary environment in which curve grade marking is used, theoretically there are only a certain number of high grades that are available. The
presence of students who have taken AP courses and who potentially have a head start increases the competition for those grades. It is possible that students who have not had access to AP courses are therefore placed at a disadvantage. Should this be of concern and what are the possible solutions?

Creating a level playing field could occur in two ways. In the first instance, AP courses could be deleted from the regular high school program and yet the research has shown that students are more than capable of achieving good results in these programs. In addition, the research suggests that they also benefit from their AP experiences once they reach post-secondary institutions. Given the concerns expressed over the current rates of attrition at post-secondary institutions this does not seem an appropriate response. The other alternative is to develop AP programs in more high schools. There is evidence in this research of students who are not currently being challenged in their high school experiences. This lack of challenge has repercussions upon entry to post-secondary institutes. In the event that AP preparation becomes available to more students, it creates the potential of larger numbers of capable students competing for the same few superior grades. Currently there is evidence to suggest that post-secondary institutes regularly weed out capable students. In the event that larger numbers of competent students show up in classes, the current practices of some faculties would result in losing students of an even higher calibre. The findings from this research would suggest that not all post-secondary faculties are prepared for this challenge.
References


Appendix A

Letter of Invitation to Participate

Would You Be Interested In Sharing Your Experiences

Of Advanced Placement Programming

Project Title: Advanced Placement Programming and the Transition from High School to University
Researcher: Graham Avon
Supervisor: Prof. Cam Symons, Faculty of Education, Brandon University, symonsc@brandonu.ca

Dear _______________________________(Name of Potential Participant)

I am a Masters student at Brandon University and am writing to invite you to participate in an important research study that I will be conducting for my Master’s Thesis. The focus of the research will be Advanced Placement Programming and the impact that this programming has had on the participants.

As one of the original participants in the AP program, you have in your possession a wealth of information contained in your experiences that I am hoping you would be willing to share with others. Generally, I am interested to know what impact involvement in Advanced Placement courses has had on you. Specifically, I am interested in the impact at three points in time while you were making your way through High School, during your transition year to University/College, and the present time.

If you agree to participate in this study I would like to interview you once for approximately 60 minutes. The interview will be in person or over the phone at a time that is mutually agreeable. I will send you a full list of questions one week prior to the interview by email so that you can look them over before we meet. This will give you a chance to collect your thoughts and ask me questions before we begin.

Your participation is voluntary and you can withdraw from the study at any time or refuse to answer any or all questions without penalty. Simply call me or send me an e-mail stating your request to withdraw based on the contact information found on this letter. Upon notification, all your data will be destroyed.

There is little risk involved in participating in this research and significant steps have been taken in the design of the study to ensure your complete anonymity.

The information gathered in this project will be used in the completion of my thesis and subsequent publications. These publications would include the thesis itself and a paper in the Brandon University Journal of Graduate Studies in Education, or other professional journals.
In all cases, every effort will be made to maintain your confidentiality. The interview session will be audio taped for later transcription and analysis by myself. All transcripts and audiotapes will be kept in a locked filing cabinet in my office in my home, and will only be seen by myself, and my research advisor Dr. Cam Symons. All electronic files will be stored on password protected files on my computer. In all of the transcripts and subsequent analysis, pseudonyms will be used to protect your identity. Any part of a transcript which might identify you will be reworded or removed and all identification will be stripped from the dissemination of the findings. You will be provided with the opportunity to check your transcript from the interview in order to add, delete, or change material and to omit identifying remarks. These transcripts will have been prepared by the researcher.

At the conclusion of the research (December 2011), all transcripts and audiotapes will be kept in the same secure location for a period of five years. At the end of this time all data will be destroyed.

This research has been approved by the Brandon University Research Ethics Committee. If you have any general concerns or complaints about this project you may contact Dr. Cam Symons in the Faculty of Education (726-9656). In addition, if you have any ethical concerns regarding the project you may contact the Brandon University Research Ethics Committee (727-7445).

If you would be interested in participating, and want more information regarding the study, please contact:

Graham Avon
401 22nd St. Brandon
Manitoba
R7B 1S1
Tel: (204) 727-2376
E-mail: gca@w cgwave.ca

I look forward to hearing from you.
Sincerely,
Graham Avon
Appendix B

Letter of Consent

Thesis Title: **Advanced Placement Programming and the Transition from High School to University**

Researcher: Graham Avon

Sponsoring Institution: Brandon University

Thesis Supervisor: Prof. Cam Symons, Faculty of Education, Brandon University, symonsc@brandonu.ca

Date: xxxxx

Dear ________________ (Name of Potential Participant)

I am writing to you to invite you to take part in research that I will be conducting. I am a Masters student at Brandon University, working on my thesis entitled, “Advanced Placement Programming and the Transition from High School to University”. The purpose of the study is to examine your perceptions of the impact of the Advanced Placement program on your academic success and life trajectory. The project has been approved by the Brandon University Research Ethics Committee. In order to collect data for the project I would like to interview ten students who have graduated from Vincent Massey High School within the last three years. Below is a Research Project Consent Form that provides the information for participants about the purpose of the study, the methods of data collection, and the strategies to ensure confidentiality.

Your signature on the Participant’s Consent Form will authorize your approval for participation in this study and your approval for the interviews to be recorded. Thank you for your time and consideration of this request.

Dear Study Participant:

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

**Purpose of the Research:**

This study will examine the impact of participation in Advanced Placement Programming on recent graduates of Vincent Massey High School. Specifically, the research will look at the role that Advanced Placement programming has had at three points in time: the High School Years, the transition year from High School to University/College, and the Present.
Procedures to be Used:  
If you agree to participate in this study, you will be interviewed once for approximately 60 minutes. The interview will occur either in person or by phone at a time that will be arranged at your convenience. In the interview session, I will ask open-ended questions in a semi-structured format to gain insight into the impact that Advanced Placement Programming has had and may continue to have on you. We will examine broad questions such as, “Did AP programming facilitate your path through High School? Did it have an impact on your transition to University or College? Does it continue to have an impact on you at this point in time?” The research is not only focussed on the content of the courses that you took but the whole experience, such as the classroom environment, the homework, the AP exams, and individual skills you may have developed. You will be provided with the interview questions one week prior to the interview either through email or regular mail, so that you may collect your thoughts concerning the questions before the actual interview. In this way you can ask for clarification of any questions before we start.

Risk/Benefits of Participants  
There is little risk involved in participating in this research and significant steps have been taken in the design of the study to ensure your complete anonymity. The information gathered in this study will be used in the completion of my thesis and subsequent publications. These publications would include the thesis itself and a paper in the Brandon University Journal of Graduate Studies in Education and other professional journals.

Recording Interviews and Confidentiality:  
In all cases, every effort will be made to maintain confidentiality of the participants. The individual interviews sessions will be audio taped for later transcription and analysis by the researcher. All transcripts and audiotapes will be kept in a locked filing cabinet in my office in my home, and will only be seen by myself and my research advisor, Dr. Cam Symons. All electronic files will be stored on password protected files on my computer. In all of the recordings, pseudonyms will be used to protect the identities of all participants. Any part of a transcript which might identify a participant will be reworded or removed (see additional note below on feedback), and all identification will be stripped from the dissemination of the findings. At the conclusion of the research (December 2011), all transcripts and audiotapes will be maintained for a period of five years in the same secure location. At the end of this time all data will be destroyed. You can withdraw from the study at any time or refuse to answer any or all questions without penalty. Simply call me or send me an e-mail me stating your request to withdraw based on the contact information found on this consent form. Upon notification, all your data will be destroyed.

Feedback About The Study:  
Participants will be given the opportunity to check transcripts and add/delete or augment information given. It will take participants roughly 20-30 minutes to review their transcripts. Participants will be given two weeks to review transcripts/findings. If I, as the researcher, do not hear from you after two weeks, I will assume that you are satisfied with the contents of the transcripts/findings. When this research project is over, individual participants can receive a summary of the results of the study. All that is required is that you sign at the bottom of this consent form with your contact information.
Credit Or Remuneration:
No credit or remuneration will be available for your participation.
Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to participate as a subject. In no way does this waive your legal rights or release the researcher, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. In order to do so, simply contact me at the information listed below. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. In doing so, please contact me:

Principal Researcher: Graham Avon
Phone: 727-2376
E-mail: gca@wcgwave.ca

OR

Research Supervisor: Prof Cam Symons
Phone: 727-9656
E-mail: symonsc@brandonu.ca

This research has been approved by the Brandon University Research Ethics Committee. If you have any general concerns or complaints about this project you may contact any of the above-named persons. In addition, if you have any ethical concerns regarding the project you may contact the Brandon University Research Ethics Committee (727-7445). A copy of this consent form has been given to you to keep for your records and reference.
Thank you for your time and consideration.

Sincerely,

Graham Avon
GENERAL CONSENT

Participant’s Signature _________________    Date__________

Researcher’s Signature _________________    Date__________

CONSENT TO RECORD INTERVIEW

Participant’s Signature__________________    Date__________

Researcher’s Signature__________________    Date__________

I would like to receive a summary copy of the results of this study. To that end, my contact email for receipt of an electronic copy is included below.

Email Address: ______________________
Appendix C

Interview Protocol

**Narrative of first semi-structured interview:**
The primary objective of the questions I will ask you today will be aimed at having you consider the impact of your decision to undertake Advanced Placement courses at High School. Specifically, I am interested in the impact of that decision during your years at High School, during the transition year from High School to University, and lastly the impact at this present moment in time. As such I will be asking you questions related to your life during these three periods of time. I would like to capture as much detail as possible and want to not only look at the academic impact but also the overall impact of the program on you.

**High School**

A) Please tell me about your initial decision to take Advanced Placement courses. Why did you make the decision to enroll in AP courses?

B) What were your expectations or what were you hoping for when you decided to take these courses? You might consider your expectations related to the content of the courses, the classroom environment, the homework, the AP exams, and individual skills you thought you would develop.

C) What were your feelings during the first few weeks of the courses? Why did you feel this way?

D) Could you reflect on any changes in those feelings that you may have experienced as time went by.

E) Can you comment on whether or not being involved in these courses was helpful in your journey through high school. Again, you might reflect on course content, classroom environment, homework, AP exams, and individual skills you developed.

F) Do you think these courses had an impact on your developing self-image in high school? If so how?

**The Transition Year to University or College**

A) Please tell me how you felt about your transition from high school to University/College

B) During the first few weeks, what were your feelings about your abilities to succeed in this new environment?

C) As time went by, did you reflect on how well the Advanced Placement courses prepared you for your transition to University/College i.e. were you seeing any benefits or drawbacks?

D) At the time that you were taking AP courses at high school you were going on the belief that they may be helpful at a later point in time. Have you had to reconsider these beliefs or had them reinforced?

E) If you consider your developing self-image during this time, what impact was your decision to take these courses having on you?

**The Present Time**

A) Even though you graduated from High School three or four years ago do you feel that your decision to take AP courses is still having an impact on the decisions you make on your life’s trajectory? If so, in what way?
B) If you could make recommendations for improving the AP Program for students, what would they be?