The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students

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By

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ABSTRACT

The purpose of this thesis is to describe and explain the influence of the Practical and Applied Arts on randomly selected comprehensive high school students. The research examined the history of the Practical and Applied Arts, the reasons for students taking the courses, the state of Practical and Applied Arts in Saskatchewan, the future of Practical and Applied Arts, the need for more research, and the effect the courses had on graduates' career and education choices (over the ten-year period immediately following high school graduation).

The research focused on the following questions:

1. What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?
2. What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?
3. To what extent did the Practical and Applied Arts subjects influence students' future career choices?

During the research I was sensitive to the following additional questions:

4. In what ways do the Practical and Applied Arts influence our students' life long learning?
5. What role do the Practical and Applied Arts play in our students' literacy for life?

Data were collected by an online questionnaire and analyzed using descriptive statistics. Eighty-six graduates responded: 32 males and 54 females. The data were analyzed by the researcher. A seven member interpretation panel purposely chosen to

represent four different profiles was used to interpret and provide meaning to the data. The interpretation panel participants consisted of three males and four females. The interpretation panel discussion was transcribed and common themes were established. The results of the study showed that a large percentage (37%) of graduates have either worked or taken further education in the area of Practical and Applied Arts. All respondents (except one) to the survey stated the Practical and Applied Arts were valuable to all students. All respondents and members of the interpretation panel highly recommended the courses, they said the courses contributed to life long learning, and improved the literacy of students. The results of this study should assist educators and society in the acknowledgement of the important role the Practical and Applied Arts can serve high school students.

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TABLE OF CONTENTS

LIST OF FIGURES

Figure page

LIST OF TABLES

Table page

CHAPTER ONE

THE PROBLEM

Introduction

I am a secondary education teacher and have taught for the past fourteen years, predominantly in the area of Practical and Applied Arts. The majority of my teaching career has been at comprehensive high schools, in urban settings. I have also taught Practical and Applied Arts courses at the post-secondary level.

I was involved with Saskatchewan Learning as they were rewriting and implementing the Practical and Applied Arts courses. In particular I was involved with the Drafting and Computer Aided Design, Construction and Carpentry, and the Electricity and Electronics curricula. During this time I was contracted to write some of the modules for both the Drafting and Computer Aided Design and the Construction and Carpentry curricula. During the implementation of these courses I was contracted to present implementation workshops for the Drafting and Computer Aided Design curriculum and I continue to facilitate Saskatchewan Learning's provincial workshops. I enjoyed these opportunities and as I began learning more I started to think about the possibilities of furthering my education. I believe that the experiences with other students, teachers and curriculum encouraged me to learn more about the Practical and Applied Arts. I have seen this research experience as an opportunity to give something back to my profession.

The Practical and Applied Arts courses offered at the high school level have often been undervalued by society because our high school education system is geared towards university entrance requirements. When only 20-25% (Koontz, 2000) of the United States and approximately 25% (Saskatchewan Learning, 2004) of the Saskatchewan graduating student body continue their education at a university level it is difficult to understand the rationale for our current educational emphasis.

I believe the Practical and Applied Arts open a door for lifelong learning and should be valued for their educational worth. The Practical and Applied Arts courses provide a very practical and down to earth approach for students. In my estimation there is too great an emphasis put on our high school students to achieve university entrance requirements when a minority of the student body ever go on to university. Further, each student has his or her own learning style. The nature of the Practical and Applied Arts courses is such that they provide both theoretical and practical applications. The practical approach provides a learning environment that is different from many of the regular compulsory (university-prep) subject areas. This balanced environment in PAA provides a variety of students' learning styles. Further, the Practical and Applied Arts courses expose students to a variety of career types.

There is demand for skilled trades (Koontz, 2000; Unger, 1992; Lyons, Randhawa, & Paulson, 1991). Currently, the construction industry is in desperate need of skilled employees; there is such a shortage of skilled trades in Canada that companies have to turn to foreign employees. It is estimated that Canada could be short as many as 1,000,000 trained workers in 10 years (CTV News, 2005, January 30).

Recently there is a growing interest in the area of Practical and Applied Arts. Saskatchewan Learning has increased the number of required credits in the Practical and Applied Arts (PAA). “Effective September 2004, students entering grade seven will be required to take at least three PAA survey courses before completing grade nine” (Saskatchewan Learning, 2003b). Based on the increase in compulsory PAA courses, it would appear the trend in Saskatchewan is to try and draw more students into the area of Practical and Applied Arts. There is a growing demand for skilled trades in the province and the high schools could serve as the place to expose students to what some of the trades may encompass.

Saskatchewan Learning indicated that in 2002-2003, an average of 20% of a typical high school student’s day consisted of courses in the practical and applied arts (Saskatchewan Learning, 2004). On the other hand, the University of Saskatchewan recently made a change to entrance requirements. They no longer accept PAA marks, but do accept one Fine Arts credit. This sends a message that the University does not value PAA courses. If approximately 25% (Saskatchewan Learning, 2004) of our student body attends university, and the University seems at odds with what students choose to study, then perhaps our high school curriculum should promote other forms of post-secondary education. Certainly, technical/vocational training should be promoted as equivalent in value to university training.

In my opinion, there have always been social pressures for high school graduates to go on to university after graduation. Our society has created an image that a university graduate with high academic standing will succeed, both financially and socially, upon entry to the workforce. Yet, despite the “promises” of university education, there will be

those who graduate from university and find themselves without a job and are still forced to make payments on a student loan (Unger, 1994). One of the benefits that many of the skilled trades offer is that students often are paid while they work toward their journey status. While students at university are paying to attend school, students in most of the trades are paid while they work towards their certification.

Even though our government and education systems continue to create programs to try and retain wayward students, high school dropout rates are still evident in our schools. If more Practical and Applied Arts courses were available to students the dropout rates may decrease. The Practical and Applied Arts show students a variety of different possible careers available after completion of high school or post-secondary education. Students who take courses they enjoy and that they see a use for are more likely to stay in high school. However, do students who take PAA, in high school, stay in high school because of PAA courses? Do students continue on with PAA courses or trades-based employment after graduation?

A review of the literature (Gagel, 2002; Hill & Smith, 1998; Lewis, 1993, 1995, 199a; Upitis, 2001; Yamazaki & Savage, 2004) indicates that the Practical and Applied Arts is a subject area that has received little attention. To encourage more research in an area that has had limited research in the past can only be positive (Lewis, 1995).

Purpose of the Study

The purpose of this study is to establish the role of PAA courses, by examining the effect of high school Practical and Applied Arts courses on high school graduates. Based on the Saskatchewan Education Indicators (Saskatchewan Learning, 2004) most students will have taken at least one course in the Practical and Applied Arts. I want to

know if students have either been employed, pursued a career or furthered their studies in an area related to that subject. Knowing what students do after high school, and why, could better inform the teaching of the Practical and Applied Arts, and perhaps all subjects. The results from this study may improve the image of the Practical and Applied Arts. Perhaps, students more interested in PAA courses should be encouraged to enroll in as many PAA courses, at the high school level, as they can.

Main Objective of the Research

The objective of this research is to investigate the influence of the Practical and Applied Arts on comprehensive high school students from mid-sized Western Canadian cities. Although the Practical and Applied Arts courses are offered at all schools, in varying forms, the comprehensives have the largest number of PAA course available to students, because these schools are larger facilities.

The focus is on the following research questions:

1. What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?
2. What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?
3. To what extent did the Practical and Applied Arts subjects influence students' future career choices?

During the research I was sensitive to the following additional questions:

4. In what ways do the Practical and Applied Arts influence our students' life long learning?

5. What role do the Practical and Applied Arts play in our students' literacy for life?

Significance of the Study

This research will describe the relationship between the Practical and Applied Arts courses and students' career choices and motivation to pursue further education. The employment history of students will portray the relationship with high school Practical and Applied Arts courses. The results from this study may inform policy about whether to build more comprehensive high schools, as new collegiates are developed.

Definition of Terms

The terms used in this thesis are based on Theodore Lewis' (1993) article *Valid Knowledge and the Problem of Practical Arts Curricula* and demonstrate the evolution of terms that lead us to the current American terminology in Technology Education:

Practical and Applied Arts

The best definition that I found was in the *Report of the Technical-Vocational Education/Comprehensive High Schools Review Committee* (Saskatchewan Education, 1987). They established a definition of the Practical and Applied Arts and I have adopted it for this thesis.

> The practical and applied arts should include but not be restricted to the subjects within industrial arts, home economics, business education, and technical-vocational education. They are intended to acquaint students with day to day aspects of adult life, including employment, family responsibilities, and leisure. These course are typically delivered in regular classrooms, laboratories, or shops, but sometimes may be delivered best by outside agencies or through the use of

community and distance education resources. (Saskatchewan Education, 1987, p. ix)

This explanation summarizes the experiences that a student in the practical and applied arts encounters.

The Practical Arts "Include affairs of everyday existence that are utilitarian in character and that are based upon human action. The term subsumes areas of the curriculum such as vocational education and technology education, along with professional education" (Lewis, 1993, p. 199). I agree with this but would add that the Practical and Applied Arts (PAA), (as termed by Saskatchewan Learning) is the correct term of reference for my writing because this is the common term used by educators in Saskatchewan.

Technology Education

Technology Education "Is the term accepted internationally to describe the curriculum that is replacing traditional industrial arts. Instead of tool skills and drawings, the new focus is on design and problem solving…Its purpose is not preparation for jobs" (Lewis, 1993, p. 199). My definition would parallel this. Although technology education is not a preparation for jobs, we must expose students to the types of occupations that are available and give them a sample of what skills are needed to be able to be successful in a particular career.

Vocational Education

Vocational Education "is the education for and about work. It refers to the education that is less than university level" (Lewis, 1993, p. 199). I agree with this definition as it is the interpretation that is readily used in the Canadian circle of the field.

However, I interpret Lewis' term of "less than" to refer to the duration of the compared courses of study, vocational education and university, and not as "less than" in a comparison of status.

Life Long Learning

Life long learning is the education that continues and is promoted throughout the life of an individual; it can be both formal and informal.

Comprehensive High Schools

Comprehensive high schools were first established in Saskatchewan in the early 1960s. By 1972 there were 16 comprehensive high schools in Saskatchewan. They were defined as comprehensive because they offered a "general core curriculum enriched with a broad range of academic and non-academic electives" (Saskatchewan Education, 1987, p. 28). "Comprehensive high school programs were designed to meet the needs and interests of all high school students by making available a broad curriculum offering" (p. 28).

Delimitations

This study sought to investigate the educational and employment trends of former comprehensive high school students. Data were collected from ten year graduates from two comprehensive high schools in mid-sized Western Canadian cities. Classmates.com was used to distribute the invitation to participate in the study. The random sample was taken from two comprehensive high schools. Ideally a larger sample of comprehensive high schools would have been surveyed. Unfortunately, both cost and time interfered with this ideal. This study was conducted from November 2005 to January of 2006, with the data analyzed in January of 2006.

Limitations

This study was subject to the following limitations:

1. The statistical nature of the study relies on the respondents' willingness to answer questions.
2. The anonymous online survey format does not guarantee that the respondent was the intended one.
3. The use of an online survey leads to a certain degree of bias in who was most likely to respond.

Assumptions

The following assumptions applied to this study:

1. The sample was a true sample of the graduating student body of the two schools.
2. The survey questions were understandable, reliable, and valid to describe the respondents' answers.
3. The data collection procedures and research did not introduce bias to inquiry, such that erroneous results were reported.
4. The respondents' perception of the meaning intended by the research instrument was accurate.
5. The respondents answered truthfully to the questionnaire.

Organization of the Thesis

Chapter 1 of this thesis provides the background to the study.

Chapter 2 is a review of the literature available in respect to the Practical and Applied Arts.

Chapter 3 is a detailed look into the design of the research, as well as the methods incorporated to execute the research.

Chapter 4 presents the results collected from the survey questionnaires.

Chapter 5 interprets the data collected from the survey questionnaires and the interpretation panel and presents the findings.

Chapter 6 presents themes, concludes the thesis, and makes recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The various locations where I sought information included: the University of Saskatchewan Main and Education Libraries, which contained a small out-dated collection of books and government documents on micro-fiche; Stewart Resource Center at the Saskatchewan Teachers Federation Building, which had only a few current articles and was the only location with access to the Wilson Web; Saskatoon City Library (Frances Morrison branch), which only had three books that I was able to find applicable to my search and all pre-dated 1995; and the Internet.

Using the Internet, I obtained information from the Wilson Web, ERIC, ProQuest, EBSCO Host, PAREonline, and GOOGLE Search. The site that allowed the most access to on-line journals was the digital library and archives at Virginia Polytechnic Institute and State University. This site gives access to full text versions of journal articles such as: Career and Technical Education Research (previously published as the Journal of Vocational Education Research), Journal of Career and Technical Education (previously published as the Journal of Vocational and Technical Education), Journal of Industrial Teacher Education, Journal of Technology Education, Journal of Technology Studies, and Techné: Research in Philosophy and Technology.

A problem is there is not a great deal of current information published about the Practical and Applied Arts, a finding of Lewis (1999a) and Reed (2002). Since Practical and Applied Arts (PAA) is more of a Canadian term I researched several other terms that were either related to, or a former reference of PAA. They included: Industrial Arts, Technical Education, Technology Education, Vocational Education, Comprehensive High Schools, and (Technological) Literacy.

The research indicated that the majority of the research documents written about Technology Education stayed relatively consistent from the 1950s through the early 1960s, approximately 50 documents per year, then there was a steep increase from the late 1960s to the early 1980s, approximately 250 documents per year, and then, aside from a spike in the late 1980s, the decline since that time has dropped to near extinction in the year 2000 (Reed, 2002). Several articles have referenced the 'technologies' as not being scholarly (Lewis, 1998; Unger, 1992; Yamazaki & Savage, 2004). It was difficult to find refereed journal articles to support my search.

History of Practical and Applied Arts in Canada

Lyons et al. (1991) explored the roots of Canadian prejudice against vocational education.

> Canadians have historically considered vocational education to be preparation for second-class citizenship. Until recently, we did not treat domestic programs for training highly skilled workers as vital to the nation's interest. Whereas European countries had programs to prepare craftspeople for skilled trades, Canada relied on immigration to fill these jobs. (p. 137)

Formal vocational education in Canada dates back to the late 1700s. In 1871, Ontario passed an act that offered two different forms of institution. One was the collegiate institute, which offered the standard program for preparing students for university. The other was high schools that offered English, natural sciences, and commercial subjects. Predominantly due to the lack of population, two separate systems were not sustained. Society was interested in offering a secondary education that would give the students more options. By the turn of the century, Canadian secondary schools offered an academic curriculum with little attention to the practical subjects (Lyons et al., 1991).

Lyons et al. (1991) described that the demand of industry for skilled workers by such groups as the Canadian Manufacturers Association and the Canadian Pacific Railways led to government-industry co-operation. This led to the Royal Commission on Industrial Training and Technical Education (1910), which resulted in an increase of financial support for education. With the Agricultural Aid Act of 1912, there was an increase in funding for agricultural education. Around the time of World War I, the nation began to realize our shortcoming in industrial and technical education, so the Canadian Government passed the Technical Education Act (1919). This provided money to promote technical education at the secondary level.

In Saskatchewan, vocational or technical education dates back to 1884, when Father Lebret established an industrial school for Indians, near Qu'Appelle (Young & Machinski, 1972). In 1905 Saskatchewan became a province, and then assumed the responsibility for its own vocational training programs.

Young (1992) stated:

> The Secondary Education Act of 1907 stipulated a two-year commercial course to include instruction in bookkeeping, business, penmanship, typewriting, and stenography. In 1911 an amendment to this act allowed high schools to provide instruction in manual training, domestic science, and physical training. A later amendment in 1913 provided for instruction in industrial training. In 1918 commercial correspondence was added to the program. (p. 5)

The terms vocational education and technical education have been used interchangeably for the past 50 years. Vocational education was described as specific preparation for employment. Technical education was described as similar to vocational education with more emphasis on theoretical content (Young, 1992).

With the depression in the 1930s, funding for vocational education decreased. In 1938, the Saskatchewan Secondary Education Act made it easier to offer vocational education. With an increased need for workers in the manufacturing sector the Vocational Training Coordination Act (1942) came into effect. This allowed not only vocational courses in secondary schools but also an increase in apprenticeship programs. Provincial composite high schools came into effect with the Vocational Schools Assistance Agreement (1945). For the next period the federal government tried to meet the needs of skilled laborers by increasing immigration. By 1960, the need for skilled laborers was on the rise again so the Technical and Vocational Training Act came into effect, allowing alternate programs to be offered at academic high schools. As Europe began to dominate the industrial trade market Canada began to feel the crunch and implemented a series of

programs to combat the problem, including: The National Training Act (1982), the Skills Growth Fund (1982-83), and the Canadian Jobs Strategy (1985).

Young and Machinski (1972-73) outlined the federal acts and regulations relating to technical and vocational education, which included: Agricultural Aid Act (1912-13), Agricultural Instruction Act (1913-23), Technical Education Act (1919-29), Unemployment & Agricultural Instruction Act (1937-39), Youth Training Act (1939-42), War Emergency Training (1940-46), Vocational Training Co-ordination Act (1942-61), Apprenticeship (1944-54), Re-establishment Training (1948-55), Vocational Schools Assistance Agreement (1948-55), Vocational Training Agreement (1948-50), Vocational Correspondence Courses Agreement (1950-55), Vocational and Technical Training Agreement 2 (1957-61), Special Vocational Training Projects Agreement (1959-61), Technical and Vocational Training Assistance Act (1961-67), Technical and Vocational Training Agreement (1961-67), and Adult Occupational Training Act (1967- 1982). Each of the above Acts worked to improve the level of technical and vocational education.

After the Second World War, two forms of technical and vocational facilities emerged in Saskatchewan, composite and comprehensive high schools. The composite high schools were developed prior to the comprehensive high schools. There were two acts which made the development of the composite schools possible, the Vocational Schools Assistance Agreement (1945), and the Larger Schools Act (1944). The Vocational Schools Assistance Agreement made federal financial assistance available to provincial school jurisdictions to provide financial assistance for vocational training at the secondary level. The Larger Schools Act allowed centralization of educational

facilities, leading to larger enrollments at schools, thus enabling a greater variety of courses to be offered (Saskatchewan Education, 1987).

Saskatchewan Education (1987) stated:

> The concept of the composite high school was based upon the belief that it is the democratic right of students to have equal opportunity while in school for preparation for life beyond school, whether it be for entering the professions, the home, the farm, the business, or skilled trades. (p. 27)

A composite high school was not considered a vocational school. The composite education offered a well-balanced academic and technical program. Composite high schools were viewed as "able to lay broad, solid foundations in the various technical fields, making the transition from school to work place more positive and easier" (Saskatchewan Education, 1987, p. 27). Composite high schools were no different in kind from any other high school; they had their logistical issues, since not all high schools were composite.

The *Technical Vocational Training Assistance Act* (1960) brought resurgence to vocational education and began the development of comprehensive high schools.

> The Act grouped all federal-provincial activities in the vocational education field, and under it the federal government agreed to reimburse the provincial governments 75% of their expenditures for construction, purchase, or alteration of approved facilities for technical or vocational training and for equipping of the same. (Saskatchewan Education, 1987, p. 28)

Young (1992) described how the Technical and Vocational Training Assistance Act (1960) affected increased school building and curriculum change. In the first two

years of the act vocational programs in Canada received over $243,000,000 from the federal government. The Act consisted of nine programs related to vocational education training. They included: vocational high school; technician training; trade and other occupational training; training program in cooperation with industry; training of the unemployed; disabled persons; vocational teachers; federal departments and agencies; and student aid, capital expenditures, apprenticeship, and correspondence courses.

The comprehensive high schools were designed to offer a wide variety of courses, to meet the needs and interest of all students. “It was the responsibility of these schools to provide a common core for all students and, as well, provide a wide range of electives that would ensure the optimum development of every high school student” (Saskatchewan Education, 1987, p. 28). In Saskatchewan there are currently 16 comprehensive high schools: A.E. Peacock, Moose Jaw; Balfour Collegiate, Campbell Collegiate, and Miller Comprehensive, Regina; Carlton Comprehensive, Prince Albert; Estevan Comprehensive, Estevan; Lloydminster Comprehensive, Lloydminster; L. P. Miller Comprehensive, Nipawin; Melfort Comprehensive, Melfort; Melville Comprehensive, Melville; Mount Royal Collegiate and Walter Murray Collegiate, Saskatoon; North Battleford Comprehensive, North Battleford; Swift Current Comprehensive, Swift Current; Weyburn Comprehensive, Weyburn; and Yorkton Regional, Yorkton. Each of the comprehensives has graduating classes of 100 or more students.

The history of Practical and Applied Arts in Saskatchewan evolved in 1987; the Department of Education, Advanced Education and Manpower, and Saskatchewan Library were assumed under the Department of Education, which is now Saskatchewan

Learning. They are responsible for all education from kindergarten through post-secondary education. The K-12 program is divided into four divisions. Division three offers a broad core of courses including a second language, industrial arts, and home economics. Division four offers both academic courses and vocational education (PAA) courses (Young, 1992).

In 1988, the Free Trade Agreement came into effect and the demand for technology has been increasing. “To survive in the modern world, Canada must ensure that its young workers are equipped with the best and the latest skills. Hands-on practical experience must be combined with essential technological knowledge” (Lyons et al., 1991, p.149). In Saskatchewan, and Canada, our government and education systems need to work towards the development of our students’ potential.

Lyons et al. (1991) argued that Canada needed to encourage students to see “vocational education as challenging and worthwhile, not just as a ticket to second-class status” (p. 149). If we can achieve this, then we are making a positive step towards the future. “There is today more need than ever for timely information, co-ordination, and co-operation among government, industry, and labour to create and to modify a unitary industrial development strategy” (p. 146).

From this historical view, it would seem the governments (Federal and Provincial) fund vocational education only in times of shortfalls of skilled trades’ workers. Further, the Practical and Applied Arts are seen as job preparation courses, without inherent value beyond preparation for work.

Need for Tertiary Education Including Practical and Applied Arts

Castellano, Stringfield, and Stone (2003) reviewed documents and statistics on Career and Technical Education, focusing on the period from 1992-2002. The preliminary sample contained 48 studies, position papers and articles. One of their findings revealed "census data and commission reports indicate that failure to get at least a high school diploma creates increasingly high hurdles for young people seeking economic sufficiency in adulthood" (p. 4). They found there was limited information on Career and Technical Education, because very few articles have been written in the area. They believed "school and district personnel are forced to make major programmatic decisions in the absence of replicating studies or, often, any process or outcome studies to inform their thinking" (p. 232). I believe this is the case in our present Saskatchewan Educational System as well.

Koontz (2000) described:

> Advances in technology and growing international economic competition have greatly increased the nationwide demand for highly skilled workers. The growing gap between the skills of the American workforce and the technical requirements of today's jobs have re-emphasized the need to transform America's educational system to provide the solid academic and technical skills required by the jobs of today and tomorrow…The fact is, careers requiring technical skills comprise the largest percentage of available employment in our economy. These careers offer high pay and will make up 65 percent of available jobs as of this year, according to the Bureau of Labor skills….Other national statistics show that only 20-25 percent of high school graduates complete a four-year degree, which parallels the

> 20 percent required by professional labor. Yet by some estimates we spend about 75 percent of our combined local, state, and federal public education resources on this minority of students. (p. 1-2)

Since this is the case we must do what we can to improve the image of the PAA. Koontz (2000) stated “the image of a precision machinist to a mother is not one she typically wants her son or daughter involved with. In addition, school counselors tell our youth to avoid manufacturing as a career” (p. 3). In order to avoid this negative bias “we must change the way we market this subject area as well as the content of the curriculum, so that we may meet current needs of entry level skill sets” (p. 3).

If we look just at the statistics for Saskatchewan, based on the Statistics Canada (2001) Census, *Population 15 years and over by highest degree, certificate or diploma, by province and territory*, there were 755,525 people 15 years of age and over in Saskatchewan. Of that population 315,780 had no degree, certificate or diploma, accounting for 42% of the population group. The number of people with: University certificate or diploma below bachelor level (21,165); Bachelor’s degree (62,130); Master’s degree (10,135); University certificate or diploma above bachelor level (5,535); Medical degree (2,925); and Earned doctorate (2,845), total 104,735 which equates to 14% of the population. However, the number of people with: Trades certificate or diploma (94,780); and other college certificate or diploma (92,315), account for 187,095 people which is 25% of the population. There were 147,905 people who indicated achieving a High School graduation certificate which accounts for the remaining 19% of the Saskatchewan population.

As a nation it is reported:

> Higher education is a gateway to higher earnings. According to the 2001 Census, more than 60% of people in the lowest earnings category did not have more than a high school education, while more than 60% of those in the top earnings category had a university degree. The population aged 25 to 34 years in 2001 is the most highly educated ever: 61% of them have credentials beyond the secondary level. (Statistics Canada, 2003a, Chapter E, ¶ 4)

The research shows that education is related to wage earnings, but it does not necessarily have to be in the form of a university education.

In the past Canada looked to the immigrant population to fill the gap of our need for skilled trades. However, “the immigrants of the 1990s are much more highly educated than earlier immigrants: 61% had credentials beyond the secondary level” (Statistics Canada, 2003b, p. 145). This may suggest that we need to look to our own population to fill the need for skilled trades. Cross culturally I found “the educational attainment of the Aboriginal population has increased substantially between 1996 and 2001" (p. 146). Education indicators in Canada discovered “In 2001, the proportion of Aboriginal people with a high school diplomas increased from 21% to 23%, while the share of those with postsecondary qualifications [including trades, college, and university education] increased from 33% to 39%” (p. 146). This demonstrates that education levels of both our immigrant and Aboriginal population are increasing, but we still have need for skilled trades.

Mupinga and Livesay (2004) stated “in an era when the highest paying and most readily available jobs seem to be in the technical and medical arenas, it may not be worth

initially pursuing a four-year degree when a one or two-year program will do" (p. 1). We want our population to be educated, however, "unless a student is preparing for a career as a lawyer or physician, which absolutely require advanced degrees, it is foolish for students and parents not to seriously research vocational-technical options" (p. 3). Unger (1992) concurred and made four points: There are greater costs incurred with a university education versus a skilled trade; there is societal need for the trades; there are many areas of employment where the skills are learned on the job; education is important, however, a person should not attend post-secondary education simply because of the expectations of others.

Statistically, Unger (1992) found that 50% of students at four-year colleges and universities in the United States quit without ever graduating, which he attributed partially to social pressures to attend institutions they had no interest in. In Canada, Trinity Western University calculated an attrition rate of approximately 30% among first-year students. Research at Trent University indicated "40 percent of the students who enroll at a university will complete their degree there. Some drop out, others transfer to another school, some finish their degree at a later date" (Matusky, 2001, p. 20). Given the various enrolment, transfer, and dropout patterns of students it is difficult to establish precise university participation rates. However, "The 2002-03 university participation rates among 18- to 21-year-olds in Saskatchewan was 20.5%, and the corresponding Canadian rate was 19.7%" (Canada Millennium Scholarship Foundation, 2006, ¶ 34). We need to get past the idea that colleges and universities are the only route to success. Students have varied interests and abilities, which are not always suited for academics.

One of the benefits of the Practical and Applied Arts courses is that they provide students with exposure to other possible careers.

These statistics point out that education is obviously beneficial to individuals and to the nation, but we will always have demand for a large percentage of jobs that do not require a university degree. I think we must educate our students in more areas, to promote them to various forms of post secondary education. I believe that the PAA courses have a lot to offer to our students.

Lewis (1993) adds a unique point: “the practical arts have languished because as a class they do not conform to the traditional view of what constitutes valid knowledge” (p. 175). In his article he gave a historical perspective of how the practical arts have struggled to be recognized as valid knowledge and find a place in the curriculum.

Lynch (2000) reviewed public survey data, government databases, and analyzed comments from position papers and interviews, relating specifically to career and technical education. From this information Lynch (2000) drew some conclusions:

> (a) The public expects its high school youth to attend college and indeed more high school graduates continue to do so each year. (b) The public expects public high schools to prepare youth for employment. (c) Huge numbers of high school graduates are not prepared to be successful at four year colleges, and large percentages (~50 percent on a nation-wide average) will drop out before completing a liberal arts baccalaureate degree or a professional program within six years. (d) Virtually all American youth should complete a solid, high quality education that includes some career and technical education through the equivalent of two years of postsecondary education…. Our challenge, of course,

> is to figure out how to use this new knowledge to advance student achievement in schools and other learning environments (e.g., workplaces). (p. 8-9)

The common theme throughout my search is that the Practical and Applied Arts are undervalued by society, and by schools. Yet, there is also a feeling that we are not reaching our potential in our high school curriculum. My view is that if we can develop a curriculum that is relevant to our student body, such that students have a sense of gratification in their studies, then they may prosper in their quest for knowledge. The PAA offers this because the hands-on component of these areas make it useful and challenging to students and thus it is a tool to promote such areas as, literacy, numeracy, and cognition. Unfortunately, as Lewis (1993) points out:

> In the secondary schools, the liberal curriculum has become an efficient, convenient way to sort children for their roles in society. Those who apparently cannot cope with this curriculum – who cannot pass the attendant examinations – have the practical arts school subjects as their alternative. (p. 197)

I believe it would be difficult to find people to admit this but I believe it is the hidden agenda of many educators.

Reasons for Practical and Applied Arts at High School

The reasons for students taking PAA courses seem to fall into three categories: for utilitarian purposes; the concept of keeping students in school; and, problem solving, cognition, critical and creative thinking, and enjoyment. The fact is both boys and girls do well in PAA courses.

Lyons et al. (1991) demonstrated in their historical review that vocational education has been perceived as “preparation for second-class citizenship” (p. 137)

despite the need for skilled trade workers. Lewis (1995) noted that the knowledge learned in technical education tends not to be considered knowledge and it is difficult to convince the public that the underlying value of technical education is academic. It has also been indicated that students attending technical/trade programs will, in less time and at less cost to them, be more likely to find employment than university grads (Mupinga & Livesay, 2004; Unger, 1992).

Hardy (2000), in a study on school-to-work transitioning, used a qualitative longitudinal approach based on student interviews. The experiences of vocational education and training students were examined in their last year of high school (28 women taking Secretarial Studies, 29 men taking Machining Technics) and first year of work following. The study was based on 107 interviews with 28 women in Secretarial Studies, and 111 interviews with 29 men, in Machining Technics. The study revealed the school-to-work transition experienced by vocational education and training students was positive "participants were proud to benefit from diversified work in which they could strengthen their occupational skills and earn the respect of their co-workers" (p. 17). Hardy discovered "the confidence they acquired through learning stimulated many to pursue further education and training" (p. 17). Analysis of the research showed students' work experiences were similar to their classroom experiences "this demonstrates that their transition to the labor market is really begun during the course of their studies, and continues within the workforce" (p. 17). The results of the study offered insight into the experience of students in vocational education and training and their transition from school to work.

The need for PAA courses has been established. There is demand for jobs requiring skills, which may suggest more emphasis on PAA courses. In order to achieve this we would have to get rid of the societal view associated with many of the PAA courses and related employment. Not all students require a university degree, because we will always have demand for a large percentage of jobs that do not require a university degree. There are social pressures for students to go to university; however, students should not go to university just because other people want them to. Hardy (2000) discovered the confidence of students, acquired through learning in PAA courses, stimulated many to pursue further education and training in PAA related areas. Lynch (2000) suggested that education should include some career and technical education. If these are some of the needs then what are some of the reasons for taking PAA courses?

Gray (2004) looked at the way Career and Technical Education (CTE) is viewed by society. He expressed his views based on the articles from his research. He believed there are many stereotypes about CTE commenting "at the local level most high school principals readily admit that, without Career and Technical Education, their schools would have little to offer many students" (p. 2). The view is that CTE only prepares students how to get a job, it is designed for only male students, minorities, slower learners, and those destined for 'dead-end jobs'. However, CTE is not designed for just potential drop outs and slow learners, but rather for some, "the lack of an alternative to strict academics is one reason why most dropouts choose to leave school in the first place" (p. 7).

In a response to an article by Lewis (1999), Cajas (2000) looked at the research into technology education. Although he agreed in the importance of technology education

he also believed “discussion on research in technology education also needs to consider what students should actually learn after they complete their technology education programs” (p. 1). I think one of the problems observed was that when we think of science and technology:

> Technology is addressed only as a means to teach and learn science. It is true that technology can provide contexts to learn science as well as other subjects, but from the perspective of technology education the fundamental aim is to secure a permanent place in general education…the society of the next century, depends heavily on technology. It is our responsibility to present a common argument to bring technology to the classroom. (p. 11)

I believe this may be true, however, how do we achieve a permanent place for Technology Education in the classroom?

Gagel highlighted his interpretive study that investigated over 200 authors and institutions from across 12 different fields and disciplines. Gagel (2002) referred to three subordinate themes: Emancipation, Sphere of Dependence, and Scientization.

> [In scientization] science is becoming an almost essential theme of technology…The Sphere of Dependence theme recognizes that current technological knowledge is dependent upon a sphere of supporting technological knowledge.… Although innovation may appear as a simple generalization skill, it is different because it exists at an applied (practical) level instead of at a level of abstract laws and principles….The Emancipation theme holds two variations. First, in a liberating role, technology allows humans to adapt to their environment.

> Second, and perhaps least recognized, is technology's interplay with ideological and political forces. (p. 11-12)

Gagel (2002) used an interpretive study where he engaged in critical discourse. In trying to relate Technology and Literacy, Gagel described Technology as commonly associated with tools, and literacy with reading and writing. Gagel suggested "technology should be cast in a more universal, literacy-oriented setting, Technological literacy" (p. 4). Gagel referred to a term called Praxis. "Praxis is the use of know-how (practical knowledge) and a level of mastery (skill) that ensure both effectiveness and efficiency" (Kotorbinski (1965) in Gagel, p. 10).

According to Gagel (2002), although people view the technologies as an area that requires little literacy, technology actually enhances and promotes literacy.

> When it comes to design within these technological communities, it could be argued that without a technical vocabulary (an articulation of technical knowledge, skill, and ability), one would have difficulty creating innovative solutions to technical problems because one would not command a proficiency with the cognitive tools of technological thought. (p. 17)

Gagel (2002) included an example showing that areas such as technical drawing have more in common with what literacy is typically thought to be. Gagel (2002) believed that more research is required before technological literacy can be measured accurately. "Given the applied nature of technology, there is a need for a deeper understanding of its ways of problem solving" (p. 18). "As long as humans continue to practice technology, what it takes to be considered technologically literate will change" (p. 19).

Hill and Smith (1998) wrote a case study of a Design Studies class in Ontario of a broad based technological education program. The program involved the community in many ways. The community also supplied materials for many of the projects. A comment of one of the students was "'I think you learn more with the hands-on projects because you have to figure things out as you go. I had to find out a lot of things for myself and it wasn't written in the textbook' " (p. 8).

According to Hill and Smith (1998), it is difficult to motivate students in many subject areas. "However, in the project-based classes, students demonstrated high levels of involvement and activity with their work" (p. 8). They found that students rarely ever skipped the class.

Boser, Palmer and Daugherty (1998) tried to find out *Student Attitudes in Selected Technology Education Programs*. Teachers from four schools were contacted by phone to solicit their participation and the one page questionnaires were distributed to the students using a pre-test and post-test design. The authors learned that students' attitudes could be affected to some degree by a short exposure to technology education, one of the goals of which was to promote technological literacy.

Autio and Hansen (2002) investigated how Finnish students become technical thinkers, through traditional and contemporary craft curricula with a technological literacy emphasis. Data were collected from 267 students ranging from grades five to nine. The control group comprised four local schools in Helsinki. Autio and Hansen established five different research questions and achievement was assessed using three tests relating to, psychomotor domain, cognitive domain and affective domain. "The data from this study suggest that the definition of technical thinking as human ingenuity in problem solving is

measurable" (p. 11). Students excelled at psychomotor activities in all project areas "perhaps because they could see meaning in their accomplishments, even with small amounts of practice" (p. 11). They discovered gender differences, where boys were more interested and thus developed more with respect to technology than did girls, as well, "male attitudes towards technology, i.e., emotional maturity, occurred earlier and more quickly than that of girls" (p. 11). Their findings were supported by their research.

Yamazaki and Savage (2004) reviewed the curricula in technology education in four regions of the United Kingdom, Alberta, British Columbia, and Japan. What they noticed was "The impact of discoveries, inventions, and creative developments in science, mathematics, and technology is apparent in practically all spheres of life, but these fundamental fields of human inquiry and action often play an ambiguous role in education" (p. 1). The results of their study showed that most of these countries had introduced technology education as a subject or at least as part of a science and technology program at the K-12 level. Not only did they find that this was the case in the countries surveyed but it also seemed to be a world trend.

Upitis (2001) conducted a qualitative inquiry into how 11-14 year old students used technology to design and produce toys. In the research the author explored students' responses to a project-based unit of study called, "Toys! Toys! Toys!" The finding was that the students enjoyed the unit and had a "sense of pride" (p. 5) from creating with their hands. Upitis (2001) concluded "It is apparent that the success of this unit was partly due to the large number of ways that students could use computers and other technology" (p. 8). Also, the needs of both boys, who enjoyed producing artifacts, and girls, who enjoyed social interactions in the process, were met. This is interesting when you

compare the male/female interests at this young age with the Canadian statistic for men and women that showed:

> Five of the 10 most frequent occupations for men in 1996 were jobs in the broad category of trades, transportation and equipment operators: truck drivers, motor vehicle mechanics, material handlers, carpenters and construction trade helpers. In 1996, more women reported themselves as retail salespersons than any other occupation…Retail salespersons and sales clerks was the leading job group among all workers in Canada's four largest census metropolitan areas in 1996. (Statistics Canada, 1996a)

Despite the inferior status of PAA, the PAA courses provide thinking (problem solving), hands-on opportunities and enjoyment (Upitis, 2001; Gagel, 2002; Hill & Smith, 1998; Castellano et al., 2003).

Most of the research in PAA argues for its utilitarian purpose of filling society's need and preparing students for the world of work. However, research investigating student involvement in PAA indicates the courses: are challenging and enjoyable; promote broad literacy; keep students in school, who might otherwise drop out. Gender seems to be a factor with boys focused more on creating artifacts and girls enjoying social interactions. Given the limited research in PAA there is a need to establish the true educational potential of the PAA courses.

The State of Practical and Applied Arts in Saskatchewan

In 1987, the *Report of the Technical-Vocational Education/Comprehensive High Schools Review Committee* developed by a collection of people from government, post secondary education, School Trustees Associations, and the Saskatchewan Teachers'

Federation, developed a list of some thirty two recommendations for secondary schools in Saskatchewan. Over the course of a year the committee met to define the Practical and Applied Arts and try to establish their place in secondary schools. The review originated from two sources which were the department seeing a need, and a group of principals and trustees approaching the minister of education. The scope of the review was conducted in three phases. First they acquired the information, and then they appointed the review committee and then prepared the report for the minister. In this report there was no indication of how the data were collected other than from the briefs of the committee members. The Technical-Vocational Education/Comprehensive High Schools Review committee developed 32 recommendations for change in the nature and funding of Education in Saskatchewan. Some of the recommendations have been carried out and some continue to be worked on. Although this document is from 1987 it is a valuable piece of information, since it is one of the few documents that is related to the Practical and Applied Arts in the province of Saskatchewan.

In Saskatchewan, the Practical and Applied Arts consist of the following areas: Accounting; Agriculture Studies; Agriculture Technician; Auto body; Career and Work Exploration; Clothing, Textiles, and Fashion; Commercial Cooking; Communication Production Technology; Construction and Carpentry; Cosmetology; Design Studies; Drafting and Computer-Aided Design; Electrical and Electronics; Energy and Mines; Entrepreneurship; Food Studies; Forestry Studies; Horticulture; Housing; Information Processing; Interior Design; Life Transitions; Machining; Mechanical and Automotive; Photographics; Photography; Graphic Arts; Theatre Arts; Tourism; Hospitality and

Entrepreneurship; Upholstery; Welding; and Wildlife Management (Saskatchewan Learning, 2003a).

It is my observation that the quantity or extent to which any or all of these areas are offered is dependent on the school, population, geographic location, access to finances, and the availability of qualified instructors.

Saskatchewan Learning is in the final phases of implementation of the new courses of curricula in the Practical and Applied Arts. At the secondary level pure courses and survey courses are available from grades nine through twelve. Pure courses consist of modules taught in one subject area. Survey courses comprise a minimum of three areas in PAA. In Saskatchewan a student is required to have completed 150 hours in PAA by completion of grade nine (Saskatchewan Learning, 2003b). At the grade 10, 11, and 12 level the PAA courses may be taken as electives.

The Future of Practical and Applied Arts

The histories of PAA (Young, 1992) indicate PAA courses are promoted only when skilled trades persons are needed. Yet, we know many students enjoy PAA. They develop practical and cognitive skills through their PAA courses. Would students drop out of school if PAA courses were not available? Perhaps PAA should be promoted not just in times of shortage of skilled trades workers (such as now) but always, because the courses influence student enjoyment, thinking, and broad based literacy.

The societal perceptions of PAA interfere with the offering of PAA courses (Lewis, 1999a, 199b, 1998, 1995, 1993; Koontz, 2000). The view held by society is captured in Lewis' words when he wrote "technology educators who traditionally enjoy inferior status in the educational community, [find that] convincing the public that the

underlying value here is academic and not, as it has been for 100 or more years, vocational, is difficult" (1995, p. 642). We must change social attitudes towards PAA because it is an area of education that benefits many students.

Hansen and Reynolds (2004) examined the perceptions of university faculty in Industrial Technology Education (ITE) programs regarding what they felt future ITE curricula might look like, 20 years from now. Using the RAND Corporation's Delphi technique, a series of three surveys, Hansen and Reynolds found that ITE programs suffered a decline in the 1980's predominantly due to changing demands in high school graduation requirements. This created a reduction in the number of electives that a student could enroll in. However, the university faculty perceived "In 20 years, the K-12 ITE curriculum will reflect society: understanding alternative energy and advanced technologies; becoming aware of technological implications; and the corporate sector's need for problem solving, planning, and spreadsheet skills will be needed both in society and in the classroom" (p. 8). As well, educators would continue to attract students to these areas and the term "industrial" would be removed from these programs.

In a report on the vocational/technical course taking, in the public high school education of the United States, Levesque (2003a) found that, in 1998, 96.5 percent of graduates had taken at least some credits in vocational/technical education. Levesque (2003b) discovered disadvantaged students were more likely to participate in vocational/technical education courses. In Saskatchewan, high school students typically spend "almost 20 percent of their course time on practical and applied arts" (Saskatchewan Learning, 2004, p. 68).

Throughout the history of education there have been new approaches to the PAA courses. However, each of these approaches has encountered implementation difficulties. Petrina and Dalley (2003) looked at the politics of curriculum reform in British Columbia. Technology education initially came into existence as Manual Training (MT) in the early 1900s. In 1925, MT's name was updated to Industrial Arts (IA). In the 1970s the name was changed to Industrial Education (IE). In the 1980s the practical subject transformed from IE to Technology Education (TE). In 1987, as a status issue, Technology Education, Physical Education, Business Education, and Home Economics were grouped into the Practical Arts. Petrina and Dalley wrote that although education in British Columbia (BC) had not seen a great deal of change since the 1900s, the reform that took place in BC in the 1970s was wide spread across the K-12 curriculum.

Petrina and Dalley (2003) used enrolment and survey data to describe the extent of the reform of IE to TE. The change was supposed to represent a shift from industrial production to technological problem solving, and provide for a literacy that equally served academic preparation, citizenship, leisure, and work. The results of the study indicated that two thirds of the teachers rejected the change from IE to TE. The result was really only a name change from Industrial Education to Technology Education because the teachers kept on teaching the same Industrial Education courses. The curriculum change in TE was a revival of the IE and since most of the instructors did not change their courses there really was no reform at all. Although their study was based in BC it describes the politics of curriculum reform everywhere.

Petrina (2000) stated "in technology education, technological literacy has been given official sanction; it is the intended outcome or end of technology education" (p.

181). Petrina (2000) believed “without shop work, critical practices in the schools smack of a cultural elitism” (p. 200).

In a study on technology education in New Zealand, Jones and Moreland (2002) found that students need to develop an understanding of the principles underlying technological development. They also noted that it was important for students to have an understanding of a range of technologies and be able to relate to the way they operate and function. In this article I have to agree with the authors when they stated:

> For a new curriculum to be introduced and be sustainable a strong emphasis needs to be placed on a coherent and long-term research and development program that is then able to inform classroom practice. Curriculum implementation requires informed teachers who are able to develop sustainable programs in order to enhance student learning in technology. (Jones & Moreland, 2002, p. 4)

Volk (1996) attempted to clarify arguments for and against industrial arts. Although there was a transformation from the name “industrial arts” to “technology education” there was confusion in the eye of the public as to the meaning of the term “technology education”. As with Sanders (2001), in my research I found that far too often people associate technology with computers. Although computers are a form of technology they are not the basis of technology education.

Volk (2003) made some interesting findings about the way old dictionaries can be used to help in teaching the technologies. He noted that many of the words in the 1895 Concise Webster’s Dictionary were related to technology. Also, over half of the illustrations were related to technology. He stated that teachers could use dictionaries and definitions of words to enhance student interest and knowledge of technology. One of the

advantages that the Practical and Applied Arts can provide to students is that, “reading and having to apply words to real situations is probably the best way to build vocabulary” (p. 2).

Lewis (1998) argued for consideration of vocational education as general education where “all students would have equal chances of engaging in a breadth of studies supportive of wide-ranging vocational insight” (p. 283). In his writing he defended his view of vocational education, which is that all students should be exposed to it, regardless of color or class. He did this by supporting his views with the literature of others. I regard Lewis highly for his numerous written works, and I find myself agreeing with most of his ideas. In this article I found myself in full support of his viewpoint:

> So long as the tight connection between curriculum, race, ethnicity, class, and opportunity remains, vocational education will continue to be tied to blue-collar work only, and schools will go on pretending that what they purvey in the academic curriculum is somehow transcendent, even though much of it is the knowledge that employers crave. (p. 305)

Attempts have been made to expand PAA beyond job skills to support literacy and problem solving. However, as with all curricular revisions there is resistance to change. Much resistance comes from society’s beliefs about the value of PAA. For new attitudes and programs to be implemented teachers need to be informed and capable of developing sustainable programs (Jones & Moreland, 2002).

The Need for More Research

Lewis (1999a), after examining research on technology education argued that more research was needed and it must take place in the classroom. He believed “research

is an important way in which the field of technology education can become further established" (p. 1). He discovered "topic areas that had received little attention included problem solving, cognition, instructional methods and strategies, and technological literacy" (p. 1). I would agree with Lewis (1999a) in saying there is a lack of study in the area of PAA because "little is known about the pragmatics of the curriculum change process. What the change from industrial arts to technology education entails in actual schools or school districts has been studied very little" (p. 8). Lewis was trying to encourage more people in the field to take on research and inquiry into the area of technology education.

Bordt, de Broucker, Read, Harris, and Zhang (2001), using Statistics Canada research, delved into the area of science and technology. They found that the federal government has made a commitment to increase funding into research and development in an attempt to make Canada one of the top five countries in research and development by 2010. Further, they found:

> The Survey of Innovation, Advanced Technologies and Practices in the Construction and Related Industries shows a shortage of skilled workers to be the most prominent obstacle to using new and better building products, building systems and construction equipment. The shortages identified were most likely in the skilled trades. (Bordt et al., 2001, p. 8)

Would the promotion of education in Practical and Applied Arts courses lead to increased numbers of students choosing careers in skilled trades?

The numbers of papers published, in the area of PAA, are low. Reed (2002) reviewed several papers from the 'Technology Education Research Database' and the

'National Research Council.' The statistics of the number of documents, including theses and dissertations, published from 1892-2000 reflect a relative peak from 1965-1990 (ranging from highs of 275 to lows of 100 publications per year). Since 1990 there has been a continuous decline to almost extinction in 2000. The decline in publication of theses and dissertations supports my findings in this area as well, and validates the need for research in the area of technology education, particularly PAA.

Given the low number of articles written in the area of PAA the research suggests that further research may discover that the PAA courses in fact provide: problem solving, cognition, opportunities for engaging, and technological literacy to all students.

Summary

The literature tells us that the Practical and Applied Arts courses have historically been funded based on industrial crisis. The fact is that students have responded very positively to the courses indicating a need for PAA courses and it is not just for a select few. Students who have gone on to university have often done so because of societal and parental pressures. The extent to which the Practical and Applied Arts courses have influenced students' future career choices is yet to be measured but the literature has stated that the exposure to possible career choices at the K-12 grade level is beneficial to students.

A limited amount of research has shown that the Practical and Applied Arts have influenced students' life long learning by providing exposure to different forms of learning. The Practical and Applied Arts courses provide hands-on experiences involving problem-solving, literacy, numeracy, and cognition which could promote students' literacy for life.

The literature states there is a need for more research into the Practical and Applied Arts. This research could demonstrate there are benefits for our students from PAA courses. Perhaps, through additional research and societal awareness, the Practical and Applied Arts could assume an integral role in their contribution to education, industry, and society. In particular, this study sought to establish the role of PAA on high school graduates. Do PAA students further their education? Do they pursue careers in PAA? In what ways do PAA courses influence life-long learning and literacy for life?

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to explore the influence of the Practical and Applied Arts on randomly selected comprehensive high school students. In this chapter I describe the choice for quantitative research. I then go on to describe the process for collecting and analyzing data.

Research Design

The approach that I chose for this study is a mixed method. This approach lends itself to a descriptive method (Brown, 2000; Stone, Kowske, & Alfeld, 2004), measuring the characteristics of comprehensive high school graduates on several variables. The study reflected a positivistic epistemology because it defines the subject's career and education behavior (Gall, Gall, & Borg, 2005; Gall, Borg, & Gall, 1996). The descriptive methodology used to understand the subject's behavior related to the Practical and Applied Arts was discovered using survey research. The survey research used an online questionnaire as the instrument of measurement, to collect the data.

The theoretical model that I have developed for this study is influenced by a graphic illustration outlined by Camp (2001). The model shows how one or more variables impact one or more subsequent variables. My model illustrates the theory that the Practical and Applied Arts influence the student at various stages in life. The student

starts off with the option of two paths - high school graduation or high school dropout. The high school graduate has two options - post-secondary education or employment. On either of those routes there may be interaction between education and employment. The alternative route, the high school dropout, enters employment and may or may not ever receive a high school diploma (see Figure 1).

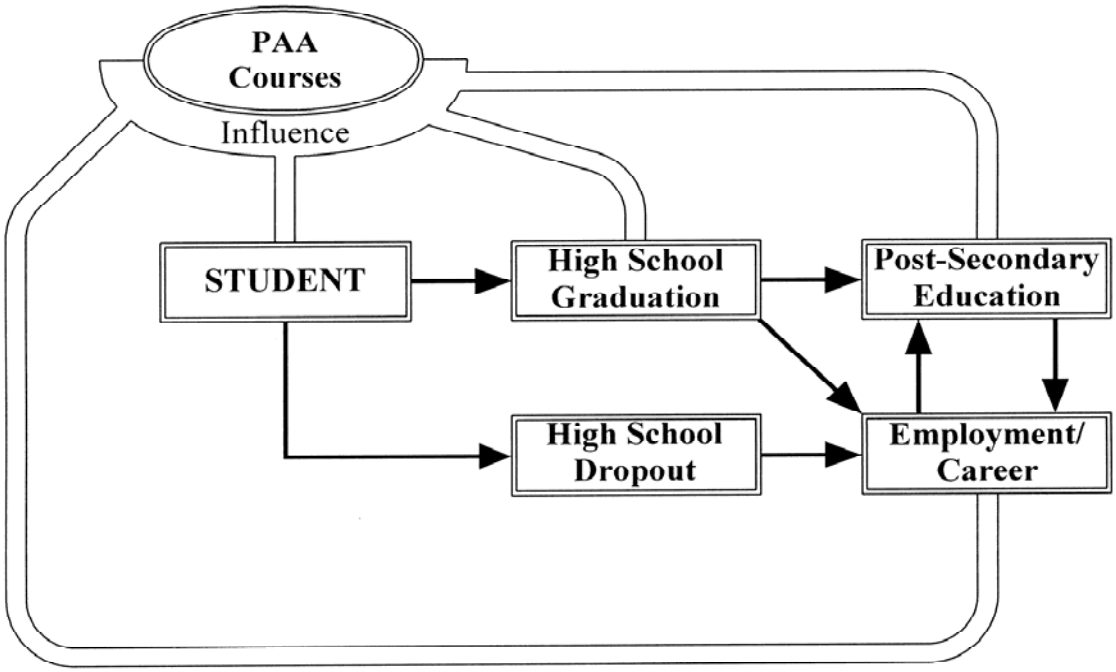

Figure 1. Theoretical model for practical and applied arts.

Description of Population

The population chosen in the study was from two comprehensive high schools in mid-sized Western Canadian cities. School A was an inner city comprehensive high

school. School B was a middle class comprehensive high school. Researching more than the two schools would have made the quantity of surveys sent out unmanageable. The comprehensive high schools were selected because their population exceeded one thousand students, thus offering the greatest selection of practical and applied arts courses available.

From the schools, I made a random selection of students who graduated at least 10 years ago. I attempted equal representation of both males and females, so that no bias was given towards either sex. To establish the random sample respondents were selected from the graduation lists from 1992, 1993, 1994, and 1995. The reason for selecting these years was to enable following the students' post-secondary progress for ten years. Four years were required to yield a significant number of graduates for the study.

The survey population was initially intended to be a true random sample of the graduating body of students from 1992, 1993, 1994, and 1995, from the two comprehensive high schools. However, this became problematic due to the Privacy Act, which limited access to personal information I had expected to acquire from the School Divisions. The next step was to contact the Alumni associations of the respective schools. Contacting the Alumni associations also became somewhat problematic because one school did not have an active alumni association. As well, some of the information conveyed to me by the alumni association was incomplete.

The next step was to contact graduates from the time period, 1992-1995, to establish whether or not a ten-year graduation celebration took place, for each of the graduation years. I learned that celebration organizers used the Classmates.com site to contact graduates. Further investigation into the site revealed that the names listed as

graduates may not be accurate. To increase the validity of the study, I was able to track down graduation year books from either the alumni associations or from graduating students. The yearbooks were then used to cross reference names with the Classmates.com site to try to establish the validity of an entry. The verified list was then used to keep record of graduates who had been e-mailed an invitation to participate in the study.

The Classmates.com site contained only a fraction of the names of graduates from each graduation year. In an attempt to try and reach as many graduates as possible the invitation e-mail requested that graduates forward the letter on to other graduates, from the sample population, if they were aware of other graduates' e-mails or contact information.

The ten-year period fell into the duration of my teaching career. The reason for selecting this period was that I would be familiar with the educational setting and time period that I am evaluating. During this time students had the chance to try a variety of work and education related experiences. To eliminate any power relationship that may exist I chose a sample population that would not have had me as an instructor.

Research Instrument

The survey instrument was an online questionnaire, designed using the work of Wolf (1997), as a guide. The survey consisted of 20 nominal questions, designed in a closed form (Frary, 1996). It was designed so that the demographic information was near the front with similar questions grouped together. Any questions that were considered to be more difficult were placed at the end of the questionnaire. The respondents were

allotted a four-week time frame to submit the questionnaire. The questionnaire was developed using PHP Surveyor software. The sample questionnaire is in Appendix D.

During my research I considered switching to a mixed-method questionnaire (Cui, 2003). In this approach I would have used mail, e-mail and the telephone. However, as I attempted to establish a true random sample I discovered that it was difficult to track down graduates. The use of the Internet is continually increasing, however, I may have been selecting subjects based on their personal wealth or their technological skill (Solomon, 2001). Since the students had graduated at least ten years ago, finding current contact information outside of Classmates.com was problematic. Further, the format of an online survey is less intrusive than a telephone or face-to-face survey. The online survey reduces the bias that may exist with an interview.

The questions given to my sample group focused on their lives for a period of ten years after high school graduation. Several of the questions related to the time period five years after high school graduation, and then the same questions were applied to the next five years. These intervals were used for several reasons. First, students embarked on a wide range of different adventures after high school and the period of time allowed for the students to establish some direction in respect to their career/education. Secondly, for students who enrolled in some form of post secondary education directly out of high school, the average length of study is less than five years. If the average person changes careers over three times in his/her lifetime some of the subjects may have had several careers in this period of time.

The questionnaire was field-tested with a small sample of potential respondents and current high school students (Frary, 1996). Spaces were allotted to make criticisms

and recommendations for improving the questionnaire. The feedback was used to revise the questionnaire before it was used.

Procedures for Data Collection

The data collection instrument, which consisted of an online questionnaire, was distributed through the Classmates.com website. Access to the site was gained by the researcher paying a fee; this enabled the e-mailing of the survey package to the selected respondents. The data collection for the survey continued over a period of three months, because Classmates.com limited a member to 20 e-mails in a 24 hour time period.

Each of the graduates in the random sample received an invitation to participate in the survey through the Classmates.com website (see Appendix B). The invitation allowed respondents access to the survey package. The survey package included a cover letter with instructions, which stated that by completing the survey, respondents were giving their consent. Anonymous survey responses were requested to be completed online. The questionnaire was e-mailed out to the graduates, using the Classmates.com website from ten-year graduation lists, obtained from the alumni associations. The questions in the questionnaire were quantitative in nature (see Appendix D). The students used nominal responses to the questions, with either a yes or no answer. Some questions incorporated a multiple-choice answer; as well, some questions allowed respondents the opportunity to include comments. The results of their answers were analyzed to identify trends.

Data Analysis

For this study I used descriptive statistics (Brown, 2000; Griffith & Wade, 2001). The data analysis brought out frequencies of various influences PAA had on students. The results of my study revealed both education and employment rates. A comparative

analysis was made of the students enrolled in PAA and those not in PAA in relation to their education and employment at five year and ten year intervals following high school graduation (Levesque, 2003a, 2003b). The conclusion from the analysis of the data established the role of the Practical and Applied Arts on randomly selected comprehensive high school students.

The computer software programs, Microsoft Excel and the Statistical Package for the Social Sciences (SPSS), were used for the statistical analysis of the data, on a personal home computer. A statistical consultant assisted in processing the data and verifying the statistical results.

To enhance the interpretation of the data, I utilized an interpretation panel. The approach, modeled from Noonan (2002), comprised seven participants, three males and four females. The participants were purposely selected from the survey sample. The profiles of the participants were as follows: a participant who took PAA courses in high school and is working in a related field, a participant who took PAA courses in high school and is not working in a related field, a participant who did not take PAA courses in high school and is working in a related field, and a participant who did not take PAA courses in high school and is not working in a related field. The intent of the four different profiles was to have a panel which would be able to bring different perspectives to the data. Once the data were collected from the questionnaires the interpretation panel was asked to interpret the results.

For the interpretation panel “the process used to establish and conduct the panel was based on those used in focus groups. Panel members were selected from participants in the study and invited to attend a meeting” (Noonan, 2002, p. 93). At the meeting the

researcher acted as the chair and also as the recorder. The panel was asked to analyze the data to establish their interpretation of the results. The interpretation panel was asked six questions; they are included in Appendix G.

The meeting lasted for two hours. The audio tapes were then transcribed and a summary of the panel's interpretations and comments were included in this thesis. The interpretations of the panel were used to assist in the understanding of the data. The panel's interpretation of the data was similar to the interpretations of the researcher; however, some of the analysis brought out by the panel helped me view the data in different ways.

Ethical Considerations

Application for approval of research protocol was made to the University of Saskatchewan Behavioral Research Ethics Board, following the guidelines and templates that are listed on the website for University of Saskatchewan Office of Research Services (2003). The documents outlined the purpose and procedures, potential risks, potential benefits, storage of data, confidentiality, right to withdraw, questions, and the consent to participate. The nature of this study was minimal risk so it followed the standard review. The letter of invitation is included in Appendix B.

By completing the questionnaire it was understood that respondents did so voluntarily and that they consented to the use of their responses in the study. Respondents were informed of the purpose and objectives of the study, as well as possible benefits. They were given procedures to follow for the questionnaire, including an estimate of the time commitment to complete the survey. The respondents were informed of the data

collection methods, the data analysis techniques, and the dissemination of information. Every effort was made to ensure the confidentiality and anonymity of the respondent.

Summary

This chapter included the introduction, research design, description of the population, research instrument, procedures for data collection, the data analysis, and the ethical procedures that I followed. All of these items constitute the methodology that was used to establish the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools, the percentage of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities, and the extent which the Practical and Applied Arts subjects influence students' future career choices.

CHAPTER FOUR

DATA COLLECTED

Introduction

This chapter presents the data collected from the survey questionnaires. The data from the questionnaires are presented in summary tables with frequencies, comparative means, and cross tabulations used to identify relationships between variables. When analyzing the data an oversight was discovered by the researcher. Most of the survey questionnaire variables were categorical which made additional statistical calculations meaningless: correlations, t-tests, and ANOVA's were not possible.

Survey Results

The results from the survey questionnaires are presented in table form. Similar questions and results are compiled when appropriate.

Survey Respondents

The respondents chosen in the study were from two comprehensive high schools in mid-sized Western Canadian cities. School "A" was a comprehensive high school located in an inner city neighborhood. School "B" was a comprehensive high school located in a middle class neighborhood. The comprehensive high schools were selected because they had populations in excess of one thousand students, thus offering the greatest selection of practical and applied arts courses available.

The survey respondents were initially intended to be a true random sample of the graduating body of students from 1992, 1993, 1994, and 1995, from the two comprehensive high schools, from mid-sized Western Canadian cities. I planned to locate graduates through the alumni associations. However, celebration organizers used the Classmates.com site to contact graduates. The Classmates.com site contained only a fraction of the names of graduates from each graduation year. In an attempt to try and reach as many graduates as possible the invitation e-mail stated that graduates could forward the letter on to other graduates from the sample population if they were aware of other graduates' e-mails or contact information. This meant the actual number of questionnaires distributed is unknown. What is known: there were 46 regular e-mails; 78 e-mails by a 10 year graduation organizer; and 536 e-mails through Classmates.com (see Table 4.1). Six of the 46 e-mails distributed by regular e-mail, and 24 of the 78 e-mails distributed by a 10 year graduation organizer, were not included in the Classmates.com list. The minimum number of graduates e-mailed would be 566, if the number of e-mails that were distributed to the same person twice is excluded. The survey developed a total of 72 responses. The goal was to receive 100 responses. In an attempt to receive the remaining 28 responses 200 follow-up e-mails were sent, resulting in an additional 14 responses.

The Classmates.com site message center kept track of all the e-mails sent. The list of sent e-mails displayed whether the e-mails had been "read" or "unread". If an e-mail was displayed as "unread" it could mean several things: the Classmates.com site had been blocked, so the e-mail was not received; the e-mail was deleted without the file opened; or the e-mail address was no longer valid, so the e-mail could not be retrieved. There

were a total of 200 e-mails that were “read”. The record of “read” e-mails was used as a list to send the follow-up e-mails. The 200 follow-up e-mails resulted in 14 additional survey responses. At the completion of the survey period there were a total 86 responses.

Table 4.1

Numbers of E-mails Distributed

School	Year	Number of Grade 12 Students			Classmates E-mails Sent		
		Male	Female	Total	Male	Female	Total
“A”	1992	191	180	371	16	33	49
	1993	205	214	419	18	27	45
	1994	189	187	376	16	27	43
	1995	187	207	394	19	21	40
Sub-Total		772	788	1560	69	108	177
“B”	1992	139	127	266	33	34	67
	1993	160	143	303	68	77	145
	1994	116	118	234	33	25	58
	1995	104	133	237	34	55	89
Sub-Total		519	521	1040	168	191	359
Total		1291	1309	2600	237	299	536

Note that over twice as many of the graduates from the school in the middle class neighborhood (school B) were able to be contacted via e-mail, despite having a smaller overall graduating population. This may suggest that economic status is an indication of whether or not e-mail is used.

Demographic Information

The number and gender of respondents are presented in Table 4.2. There were a total of 86 survey respondents, consisting of 32 (37%) male and 54 (63%) female. Of the survey respondents 59 (69%) were from the middle class neighborhood (school B) and 27 (31%) were from the inner city neighborhood (school A).

Table 4.2

Survey Respondents (n=86)

	High School		
Gender	School B	School A	Total
Male	26 (*44)	6 (*22)	32(37)
Female	33 (*56)	21 (*78)	54 (63)
Total	59 (**69)	27 (**31)	86 (100)

Note. ( ) Percentage, * gender percentage by high school, ** gender percentage by sample.

The respondents were between 27 and 30 plus years of age, with 42 (49%) of respondents indicating they were 30 years of age or older (Table 4.3).

Table 4.3

Respondent Age

	High School						
	School B			School A			
	Gender			Gender			
Graduation Year	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
27 or less	1	0	1	0	0	0	1 (1)
28	8	19	27	0	0	0	27 (31)
29	3	5	8	0	8	8	16 (19)
30 / +	14	9	13	6	13	19	42 (49)
Total	26	33	59	6	21	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

The respondents by year of high school graduation are indicated in Table 4.4. Observing Tables 4.3 and 4.4 would seem to show that all survey respondents graduated without having to repeat a year of school (on-time), indicating that the survey is capturing only those who graduated on-time.

Table 4.4

Graduation Year

	High School						
	School B			School A			
	Gender			Gender			
Graduation Year	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
1992	9	2	11	2	4	6	17 (20)
1993	4	8	12	4	9	13	25 (29)
1994	4	4	8	0	8	8	16 (19)
1995	9	19	28	0	0	0	28 (33)
Total	26	33	59	6	21	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

Personal Information

The respondent grade twelve averages by high school and gender are shown in Table 4.5. The grade 12 average ranges, number and percent of respondents are indicated. Seventy-six (88%) of the survey respondents indicated grade 12 averages between 70 and 100%. Sixty-two (72%) of the respondents indicated grade 12 averages between 70 and 90%. Two (2%) of the survey respondents chose to not answer the question, both were female and attended the middle class neighborhood school (B).

Generally, the average grade from the middle class neighborhood (school B) is slightly higher than the inner city neighborhood school (school A). The males from school B indicated higher averages than the females. School A was the reverse.

Table 4.5

Grade 12 Average

Grade 12 Average (%)	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
50-60	1 (4)	1 (3)	2 (3)	0	2 (10)	2 (7)	4 (5)
60-70	0	2 (6)	2 (3)	1 (17)	1 (5)	2 (7)	4 (5)
70-80	8 (31)	7 (21)	15 (25)	3 (50)	5 (24)	8 (30)	23 (27)
80-90	10 (39)	17 (52)	27 (46)	2 (33)	9 (43)	11 (41)	38 (44)
90-100	7 (26)	4 (12)	11 (19)	0	4 (19)	4 (15)	15 (17)
No Answer	0	2 (6)	2 (3)	0	0	0	2 (2)
Total	26	33	59	6	21	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

The current employment status of survey respondents is as follows: five (6%), Self employed; 74 (86%), Employed; six (7%), Student; and one (1%), No answer. The current employment status of respondents by high school and gender is shown in Table 4.6. Five (6%) of the survey respondents from school B indicated self employment whereas no one indicated self employment from school A.

Table 4.6

Current Employment Status

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Self Employed	4 (15)	1 (3)	5 (8)	0	0	0	5 (6)
Employed	20 (77)	29 (88)	49 (83)	6 (100)	19 (90)	25 (92)	74 (86)
Student	2 (8)	3 (9)	5 (9)	0	1 (5)	1 (4)	6 (7)
No Answer	0	0	0	0	1 (5)	1(4)	1 (1)
Total	26 (100)	33 (100)	59 (100)	6 (100)	21 (100)	27 (100)	86

Note. ( ) Percent. School B (n=59), School A (n=27).

There are currently 33 different courses offered in the area of Practical and Applied Arts. The 33 PAA courses were not all offered during the time the survey respondents attended high school. Courses indicating a zero may indicate the course was not offered. The Practical and Applied Arts courses taken by respondents are shown in Table 4.7. The table shows the PAA courses and indicates the number of survey respondents taking the course, broken down by high school and gender.

Survey respondents indicated taking 24 of the 33 courses (73%) listed as PAA. The top twelve PAA courses taken, in high school, by respondents, indicating over a 10% response, were as follows: Graphic Arts; Commercial Cooking; Mechanical and Automotive; Electrical and Electronics; Photography; Welding ; Accounting; Construction and Carpentry; Clothing, Textiles, and Fashion; Drafting and Computer-Aided Design; Machining; and Theatre Arts.

Table 4.7

Practical and Applied Arts Courses Taken in High School

	High School				
	School B		School A		
	Gender		Gender		
Course	Male	Female	Male	Female	Total
Accounting	5	4		6	15 (17)
Agriculture Studies					0
Agriculture Technician					0
Autobody		3			3 (3.5)
Career and Work Exploration		1	2	2	5 (5.8)
Clothing, Textiles, and Fashion	1	6		7	14 (16.3)
Commercial Cooking	2	9	2	9	22 (25.6)
Communication Production Technology		2		1	3 (3.5)
Construction and Carpentry	8	1	5	1	15 (17.4)
Cosmetology					0
Design Studies		4			4 (4.7)
Drafting and Computer-Aided Design	4	5	2	3	14 (16.3)
Electrical and Electronics	11	1	4	1	17 (19.8)
Energy and Mines					0
Entrepreneurship				1	1 (1.2)
Food Studies	2	1	1	3	7 (8.1)
Forestry Studies					0
Horticulture					0
Housing	2	2		2	6 (7)
Information Processing	1	3		4	8 (9.3)
Interior Design	1	4		2	7 (8.1)
Life Transitions			3	1	4 (4.7)
Machining	7		5	1	13 (15.1)
Mechanical and Automotive	10	3	4	1	18 (21)
Photographics	1	4			5 (5.8)
Photography	1	12		3	16 (18)
Graphic Arts	5	17	2	3	27 (31.4)
Theatre Arts	3	6		3	12 (14)
Tourism					0
Hospitality and Entrepreneurship				1	1 (1.2)
Upholstery					0
Welding	10	1		5	16 (18.6)
Wildlife Management					0

Note. Not all courses were offered during the time period. A '0' may indicate not offered.
( ) Percent. School B (n=59), School A (n=27).

Respondents' answer to the question of whether their marks in their PAA courses were higher than their regular subject marks are indicated in Table 4.8. Thirty (35%) of the survey respondents indicated their PAA marks were higher than their regular subjects. Eleven (13%) respondents indicated their PAA marks were not higher. Thirty-eight respondents (44%) indicated their marks were the same and seven (8%) of survey respondents did not answer the question. There was no important difference in response between respondents from either of the two high schools. However, respondents from school A were 17% more likely to identify that their marks in PAA courses were basically the same as in their other courses.

Table 4.8

PAA Marks Higher Than Regular Subjects

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Yes	7	14	21 (36)	2	7	9 (33)	30 (35)
No	6	3	9 (15)	0	2	2 (7)	11 (13)
Basically the Same	10	13	23 (39)	4	11	15 (56)	38 (44)
No Answer	3	3	6 (10)	0	1	1 (4)	7 (8)
Total	26	33	59	6	21	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

Survey respondents were asked to indicate their reason(s) for taking PAA courses. Some respondents selected only one answer. However, some respondents chose more than one answer. The reasons why respondents took PAA courses are indicated in Table 4.9. There was not a substantial difference in response between respondents from either school.

Table 4.9

Reasons for Taking PAA Courses

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Graduation Requirements	5	6	11	2	2	4	15(17)
Possible Future Employment	7	8	15	0	7	7	22 (26)
Personal Reasons	12	13	25	3	12	15	40 (47)
For Curiosity	13	15	28	3	8	11	39 (45)
Total	37	42	79	8	29	37	116

Note. ( ) Percent. School B (n=59), School A (n=27).

Survey respondents were asked whether they would recommend the PAA courses to other students. Seventy (81%) respondents indicated they would recommend PAA courses to other students. One (1%) respondent indicated she would not recommend the PAA courses. Nine (10%) respondents were unsure, and six (7%) respondents did not answer the question. There was no important difference between schools with respect to the number of respondents indicating they would recommend PAA courses. There were a greater percentage of respondents from the inner city neighborhood (school A) indicating "unsure". There were a greater percentage of respondents from the middle class neighborhood (school B) indicating "no answer". The response to whether or not respondents would recommend the PAA course to other students by high school and gender is indicated in Table 4.10.

Table 4.10

Recommend PAA Courses to Students

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Yes	21 (81)	27 (82)	48 (81)	6 (86)	16 (80)	22 (81)	70 (81)
No	0	1 (3)	1 (2)	0	0	0	1 (2)
Unsure	2 (8)	3 (9)	5 (8)	0	4 (20)	4 (15)	9 (10)
No Answer	3 (12)	2 (6)	5 (8)	1 (14)	0	1 (4)	6 (7)
Total	26	33	59	7	20	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

Survey respondents level(s) of education achieved were indicated by high school and gender (see Table 4.11). Respondents may have selected more than one level of education. Levels of education achieved were as follows: Journey status, three (3.5%); SIAST or similar, 13 (15%); College, 11 (13%); University, 63 (73%); and other, 12 (14%).

The three survey respondents indicating journey status all graduated from school A. There was 22% greater participation at “SIAST or similar” from school A. There was only a 3% difference between the two schools on college participation. However, there was a 20% difference in university participation favoring school B.

The gender differences for school A indicated males were more likely to achieve journey status. However, females indicated greater participation in SIAST or similar, college, and university education. The gender differences for school B indicated females more likely to enroll in SIAST or similar courses, and college. However, males more frequently indicated taking university or other levels of education.

Eleven of the twelve survey respondents indicating “other” as a level of education included comments. The types of education included: four certificates (general accounting, cosmetology, tech school, applied multimedia and graphic arts); trustee program; business college degree; Justice Department-Law; administrative assistant program; Ph. D.; chartered accountant; and respondent # 64 indicated “on the job training due to high school experience”. In later comments, the one respondent who did not comment indicated working fulltime since graduation.

Table 4.11

Level(s) of Education Achieved

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Journey Status	0	0	0	2 (33)	1 (5)	3 (*11)	3 (**3.5)
SIAST or Similar	1 (4)	4 (12)	5 (*8)	3 (50)	5 (24)	8 (*30)	13 (**15)
College	1 (4)	6 (18)	7 (*12)	1 (17)	3 (14)	4 (*15)	11 (**13)
University	23 (88)	24 (73)	47 (*80)	4 (67)	12 (57)	16 (*60)	63 (**73)
Other	6 (23)	3 (9)	9 (*15)	0	3	3 (*11)	12 (**14)
	n= 26	n= 33		n= 6	n= 21		

Note. ( ) Percentage, (*) Percentage per school, (**) Total percentage. School B (n=59), School A (n=27).

Respondents may have achieved more than one level of education.

Respondents’ answers to whether they went on to some form of post-secondary education or started in the work force after graduation from high school, by high school and gender, is indicated in Table 4.12. The table shows that there is very little difference in the percentage of participation in post-secondary education between the two schools. However, it was observed earlier that the level of education did vary between the two

schools. The middle class neighborhood school (B) indicated a 10% higher rate of work than school A. It was also found that 16 of the survey respondents indicated both post-secondary education and work. This means that many respondents worked and furthered their education at the same time.

Table 4.12

Post-High School Decision

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Post Secondary Education	21 (*81)	26 (*79)	47 (**80)	4 (*67)	17 (*81)	21 (**78)	68 (79)
Work	14 (*54)	14 (*42)	28 (**47)	2 (*33)	8 (*38)	10(**37)	13 (15)
	n= 26	n= 33		n= 6	n= 21		

Note. ( ) Percentage, (*) gender percentage by high school, (**) percentage by high school.

School B (n=59), School A (n=27).

16 respondents indicated both post secondary education and work.

Respondents' answers to whether they were considered to be a student that struggled in regular school classes, by high school and gender is indicated in Table 4.13. Five (6%) survey respondents indicated they struggled in high school. This small number is fairly evenly distributed across schools and gender.

Table 4.13

Struggled in Regular Classes

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Yes	2 (7)	1 (3)	3 (*5)	0	2 (*10)	2(*7)	5 (**6)
No	24	32	56	6	19	25	81 (**94)
Total	26	33	59	6	21	27	86

Note. ( ) Percentage, (*) Percentage per school, (**) Total percentage.

School B (n=59), School A (n=27).

Respondents were asked whether they enjoyed their PAA courses more than their regular subjects. Thirty-nine (45%) survey respondents indicated they enjoyed their PAA courses more than the other courses. Twenty-six (30%) indicated they did not enjoy their PAA courses more than the other courses. Eleven (13%) indicated unsure, and ten (12%) did not respond. Their responses are indicated in Table 4.14.

Table 4.14

Enjoyed PAA Courses More Than Other Courses

	High School						
	School B			School A			
	Gender			Gender			
	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Yes	8	16	24	3	12	15	39 (45)
No	10	11	21	3	2	5	26 (30)
Unsure	5	1	6	0	5	5	11 (13)
No Answer	3	5	8	0	2	2	10 (12)
Total	26	33	59	6	21	27	86

Note. ( ) Percent. School B (n=59), School A (n=27).

Education and Employment

Respondents who went on to some type of post-secondary education, after graduation from high school, were asked to indicate the years they were students, for the ten-year time period after high school graduation. The responses are indicated in Table 4.15. The table shows an initial enrollment of 65% of respondents in post-secondary education. In the proceeding years the level of enrollment declines. The declining rates are 6%, 6%, 2%, 16%, 12%, 3%, an increase of 1%, a decrease of 5%, and then a final decrease of 3% in the tenth year after high school graduation.

Table 4.15

Post-Secondary Education Directly After High School, Years as a Student

	High School						
	School B			School A			
	Gender			Gender			
Year After Graduation	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
1	15	22	37	4	15	19	56 (65)
2	16	20	36	2	13	15	51 (59)
3	12	22	34	3	9	12	46 (53)
4	13	19	32	3	9	12	44 (51)
5	12	13	25	2	3	5	30 (35)
6	8	7	15	1	4	5	20 (23)
7	8	6	14	1	2	3	17 (20)
8	7	6	13	1	4	5	18 (21)
9	6	6	12		2	2	14 (16)
10	4	7	11				11 (13)
	n= 26	n= 33		n= 6	n= 21		

Note. ( ) Percentage of survey population. School B (n=59), School A (n=27).

Respondents who went on to some type of work, after graduation from high school, were asked to indicate the years they had been in full-time employment, for the ten-year time period after high school graduation. The responses are indicated in Table 4.16. The table shows that 20% of the survey respondents entered full-time employment following high school graduation. In the proceeding years the level of employment initially decreases for one year and then generally increases. The first year experienced a 9% drop, followed by a 3% rise, then an increase of 3%, 3%, 3%, 6%, then a decrease of 2%, the rate stabilized for a year, followed by a 1% decrease, and then a final increase of 8% in the tenth year after high school graduation.

Table 4.16

Worked Directly After High School, Years in Full Time Employment

	High School						
	School B			School A			
	Gender			Gender			
Year After Graduation	Male	Female	Sub-Total	Male	Female	Sub-Total	Total
1	6	5	11	1	5	6	17 (20)
2	2	5	7	1	1	2	9 (11)
3	5	4	9		3	3	12 (14)
4	5	5	10	1	4	5	15 (17)
5	6	5	11	1	5	6	17 (20)
6	9	7	16	1	5	6	22 (26)
7	9	6	15	1	5	6	21 (24)
8	8	8	16	1	4	5	21 (24)
9	7	8	15	1	4	5	20 (23)
10	7	11	18	1	8	9	27 (31)
	n= 26	n= 33		n= 6	n= 21		

Note. ( ) Percentage of survey population. School B (n=59), School A (n=27).

The number of survey respondents indicating full-time employment and attending post-secondary education, for any given year, does not add up to 86 respondents. This would indicate that the question was not answered properly.

Question 17 referred to the time period from high school graduation to five years after high school graduation. Respondents were asked if the employment or education they had been involved with was related to any of the PAA courses they may have taken. Out of 85 survey respondents responding 29 (34%) indicated the employment or education they had been involved with was related to PAA courses they had taken in high school.

Question 18 referred to the time period from high school graduation to five years after high school graduation. Respondents were asked if they worked or took any further education in any of the areas of PAA. Out of 85 survey respondents, 32 (37%) indicated they worked or had taken further education in the area of PAA. School A showed a 5% difference in response between the two schools.

Question 19 referred to the time period from five years after high school graduation to ten-years after high school graduation. Respondents were asked if the employment or education they had been involved with was related to any of the PAA course they may have taken. Out of 86 survey respondents, 31 (36%) indicated the employment or education they had been involved with was related to PAA courses they had taken in high school.

Question 20 referred to the time period from five years after high school graduation to ten-years after high school graduation. Respondents were asked if they worked or took any further education in any of the areas of PAA. Out of 85 survey

respondents, 27 (31%) indicated they worked or had taken further education in the area of PAA.

The responses for questions 17-20 are shown in Table 4.17. The table displays respondents by high school and gender. There was no important difference in response between the two schools. However, both schools showed males 20% more likely than females to indicate that the employment or education they had been involved with was related to any of the PAA course they may have taken. The important difference was found between the males from the two schools (questions 18-20). Males from the inner city neighborhood (school A) were 30% more likely to have worked or taken further education in areas of PAA. The same difference was observed in the second time period, from five years after high school graduation to ten years after high school graduation. This may indicate a greater percentage of males from school A will experience employment and education in areas of PAA.

Table 4.17

Employment or Education Related to PAA Courses Taken, Worked or Further Educated in Areas of PAA

		High School						
		School B			School A			
		Gender			Gender			
		Male	Female	Sub-Total	Male	Female	Sub-Total	Total
Employment/Education Related to PAA Courses. (Grad to 5 Years)	Yes	12 (46)	8 (24)	20 (34)	3 (50)	6 (29)	9 (33)	29 (34)
	No	14	24	38	3	14	17	55 (64)
	Total	26	32	58	6	20	26	84
Worked or Taken Further Education in PAA. (Grad to 5 Years)	Yes	10 (38)	11 (33)	21 (36)	4 (67)	7 (33)	11 (41)	32 (37)
	No	15	22	37	2	14	16	53 (62)
	Total	25	33	58	6	21	27	85
Employment/Education Related to PAA Courses. (5 to 10 Years)	Yes	12 (46)	9 (27)	21 (36)	4 (67)	6 (29)	10 (37)	31 (36)
	No	14	23	37	2	14	16	53 (62)
	Total	26	32	58	6	20	26	84
Worked or Taken Further Education in PAA. (5 to 10 Years)	Yes	9 (35)	11 (33)	20 (34)	4 (67)	3 (14)	7 (26)	27 (31)
	No	16	22	38	2	18	20	58 (67)
	Total	25	33	58	6	21	27	85
		n= 26	n= 33		n= 6	n= 21		

Note. ( ) Percent. School B (n=59), School A (n=27). Total (n) not equal to 86 due to no response.

Other levels of education ranged from certificates to a Ph. D.

The survey data indicated relationships between the PAA course taken and levels of education (Table 4.18). As described earlier the other levels of education included education ranging from a Ph. D. to certificate programs. The courses shown applicable to all levels of education are identified with an asterisk.

Table 4.18

PAA Courses in Relationship to Level(s) of Education

Course	Levels of Education				
	Journey Status	SIAST or Similar	College	University	Other
Accounting		4 (4.7)		10 (11.6)	3 (3.5)
Agriculture Studies					
Agriculture Technician					
Autobody		1 (1.2)	2 (2.3)		
*Career and Work Exploration	2 (2.3)	2 (2.3)	1(1.2)	1 (1.2)	1(1.2)
Clothing, Textiles, and Fashion		3 (3.5)	1(1.2)	10 (11.6)	1(1.2)
*Commercial Cooking	1 (1.2)	5 (5.8)	5 (5.8)	12 (14.0)	3 (3.5)
Communication Production Technology		2 (2.3)			
*Construction and Carpentry	1 (1.2)	4 (4.7)	2 (2.3)	9 (10.5)	1(1.2)
Cosmetology					
Design Studies		2 (2.3)	1 (1.2)	3 (3.5)	
Drafting and Computer-Aided Desigr		4 (4.7)	2 (2.3)	9 (10.5)	4 (4.7)
*Electrical and Electronics	1 (1.2)	2 (2.3)	3 (3.5)	11 (12.8)	1 (1.2)
Energy and Mines					
Entrepreneurship		1 (1.2)			
*Food Studies	1 (1.2)	2 (2.3)	1(1.2)	4 (4.7)	1 (1.2)
Forestry Studies					
Horticulture					
Housing		1 (1.2)	1(1.2)	2 (2.3)	2 (2.3)
Information Processing		1(1.2)	1(1.2)	7 (8.1)	1(1.2)
Interior Design		2 (2.3)	1(1.2)	4 (4.7)	1(1.2)
Life Transitions			2 (2.3)	4 (4.7)	
*Machining	2 (2.3)	2 (2.3)	1(1.2)	8 (9.3)	1(1.2)
*Mechanical and Automotive	2 (2.3)	3 (3.5)	2 (2.3)	12 (14.0)	3 (3.5)
Photographics			1(1.2)	4 (4.7)	1(1.2)
Photography			3 (3.5)	13 (15.1)	
*Graphic Arts	1(1.2)	6 (7.0)	3 (3.5)	22 (25.6)	2 (2.3)
*Theatre Arts	1(1.2)	1(1.2)	1(1.2)	9 (10.5)	2 (2.3)
Tourism					
Hospitality, and Entrepreneurship		1(1.2)			
Upholstery					
*Welding	1(1.2)	3 (3.5)	2 (2.3)	10 (11.6)	1 (1.2)
Wildlife Management					

Note. ( ) Percentage of respondents. * Indicates courses taken by respondents at all levels of education.

Additional Comments

Some of the questions allowed respondents to include additional comments. In some cases the comments helped to clarify any discrepancies which may have occurred in the data. Some of the comments are summarized below.

In education the goal is to educate all students. Motivational speeches often focus on the belief that if you have reached one student in your teaching career then you have achieved something. One of the comments of a survey respondent stated “work-ed landed me my first and only job” (Respondent #18). The circumstances surrounding the reasons why this student had stuck with this same job for over ten years are unknown. However, the work education program must have provided enough interest for the respondent to stay employed in that position.

Question nine generated a variety of comments related to each of the responses. The question asked “Which of the following best describes your reason for taking these courses?” The responses included: graduation requirement, possible future employment, personal reasons, and for curiosity. Respondent’s answers were as follows: 21, for curiosity; 17, personal reasons; six, possible future employment; and five, graduation requirement. Respondents’ answers, where two or more choices were selected, were as follows: seven, possible future employment, and personal reasons; five, personal reasons, and for curiosity; four, graduation requirement, and personal reasons; four, possible future employment, personal reasons, and for curiosity; three, graduation requirement, and for curiosity; one, graduation requirement, possible future employment, and personal reasons; and, one, graduation requirement, personal reasons, and for curiosity.

There were 116 responses to question nine which produced 59 comments, they included: graduation requirement, “but also because they were a lot more fun than other classes” (Respondent # 36); possible future employment, “I also felt that this training would help me achieve the goals I set for myself” (Respondent #64); personal reasons, “interest and desire for a balanced education” (Respondent #3), and “I was interested in taking classes that weren’t as book based and more hands on” (Respondent #57); for curiosity, “ Core curriculum classes are OK, but practical arts are fun and relevant for career directions” (Respondent #21).

Twenty-three out of 86 respondents (27%) provided additional comments at the end of the questionnaire. These comments provided additional insight into the role that the PAA courses served the students. Some of the comments are listed below.

PAA courses were described as an alternative to compulsory subjects. Respondent 13 commented:

> The Practical and Applied arts classes I took kept me interested in school. School was easy, unstimulating for the most part, and instead of skipping classes and going home, I would spend my time in these classes. You could say they kept me out of trouble.

Respondent 12 argued that high schools should encourage PAA courses more “I fully endorse every effort to place more emphasis on Practical and Applied Arts. I found (and continue to believe) that too much emphasis is placed on math and science and not on liberal arts”.

Two survey respondents wrote that too much emphasis is placed on university education and society does not value “blue collar work”:

> There is a focus in high schools for students to go to University, which is completely unrealistic and unnecessary. University is not a place to go to train for a career (outside of typical career-related courses: medicine, engineering, commerce, education), it should be a place to learn and to develop an appreciation for life. People who want a career should be going to technical institutes and institutes of applied arts and science. (Respondent #12)

Respondent 21 concurred:

> I think everyone is encouraged to get a university degree, and nobody is encouraged to get a technical education at a college. Our society frowns on blue collar work, yet these workers are essential to our economy. Practical and Applied Arts should be developed further, with scholarships and incentives like universities have. (Respondent #21)

Respondent 37 described the PAA courses as relevant to real life:

> I think Applied/Practical Arts is an integral part of our high school curriculum. Most of these courses relate to real life and were familiar to most students. I remember students being treated as adults and encouraged to tap into our creativity. I would encourage my children to take these classes in high school to develop self confidence, interesting hands on skills and broaden their imagination.

Respondent 45, although not using the knowledge learned in the PAA courses saw their value:

> I think that although I did not use the knowledge I gained from these classes for the most part, it is a good idea to expose kids to the areas and let them know if it's something they enjoy, especially with the shortage in pretty much all the skilled

> trades that we're experiencing in this country. I'm glad that I took those classes, so I at least have an idea of what's involved with the various trades, and it helped me make my career decision.

Even though some of the PAA courses may not have been used directly, they are often used later in life.

> It was great to have practical, hands on courses like welding, machining and automotive. For an engineer it is great to have done some of the work that you later will rely on others to do properly and understand some aspects of it from experience. [They are] also good general life skills to have. (Respondent #50)

Four of the twenty-three respondents indicated that the exposure to the PAA courses helped them to select future careers.

> I would never have discovered my true calling if I had not been given the opportunity to study an applied art, and regret not taking more classes. I was in the advanced program at [school B], and it's not like I would not have succeeded in another field. These classes are just as valuable to students who do succeed in regular classes as they are to those who struggle. It not only changed my life but shaped its entire course. (Respondent #60)

Exposure to the PAA courses can influence future career decisions.

> I currently work as a graphic designer; however, the graphic design course I took in school was nothing like what I am doing now. We had no access to computers to learn web design, digital graphic design etc. I wish we would have had access to these things because it would have steered me into my current profession a lot

> sooner. I ended up taking a lot of classes at the U of S that didn't pertain to what I ultimately wanted to do. (Respondent #73)

The PAA courses provide a practical approach to education. However, respondent 74 wrote:

> Arts - practical and otherwise are very important in the educational system. They help to expand the creative mind, and allow for both emotional and spiritual growth. The arts help communicate inner feelings/thoughts/emotions and opinions, which is vital for all ages, but especially teens going through high school.

The above comments described the general views observed from the respondents' responses. Although I did not include all of the comments, the general themes and viewpoints were summarized in the quoted material.

Summary

The survey data attempted to capture the profiles of students who had graduated from two comprehensive high schools in mid-sized Western Canadian cities. The survey data provided the following: demographic information of respondents, 63% female, 27-30 years of age and older, and graduated between 1992 and 1995. The academic achievement of respondents indicated: 86% had high school grade averages between 70-100%; 6% of respondents indicated academic struggles in high school; 73% had achieved some form of university education with 68% of respondents pursuing some form of post-secondary education immediately after high school graduation. A comparison of respondents' regular subject marks relative to PAA marks indicated marks were generally the same. The majority of reasons for taking PAA courses were for personal reasons and

curiosity. Forty-five percent of respondents enjoyed PAA courses more than their regular courses and 81% indicated they would recommend PAA courses to other students. The career and post-secondary information (for a ten-year period after high school graduation) indicated most respondents completed their post-secondary education. Thirty-six percent of respondents indicated the employment or education they experienced was related to PAA courses taken in high school and 37% of respondents indicated working or further educating themselves in any areas related to PAA. The relationship between PAA courses taken and levels of education indicated there are certain courses that may attribute to future levels of education. The employment status of respondents indicated everyone was currently employed or continuing studies.

A summary of the survey respondents comments were included with the data. PAA courses were described as: more fun than other classes; helping to achieve goals; providing a balanced education; not as booked based; more hands-on; an alternative to compulsory subjects; keeping students “out of trouble”; relevant for career directions; relevant to real life; and provided a practical approach to education. Many respondents indicated that the exposure to the PAA courses helped them to select future careers. Respondent 12 and 21 commented that high schools should encourage PAA courses more because there is too much emphasis placed on university education and society does not value “blue collar work”. Respondents not using the knowledge learned in the PAA courses still saw their value and are often used later in life. The interpretation of the data is presented in Chapter Five.

CHAPTER FIVE

DATA INTERPRETATION AND FINDINGS

Introduction

An interpretation panel comprising seven people from four profiles (a participant who took PAA courses in high school and is working in a related field, a participant who took PAA courses in high school and is not working in a related field, a participant who did not take PAA courses in high school and is working in a related field, and a participant who did not take PAA courses in high school and is not working in a related field) was used to supplement my analysis of the survey data. The members of the interpretation panel examined the data in light of each of the five research questions. In this chapter the data are interpreted and observed themes are identified.

Interpretation of Survey Questions

The purpose of this study was to establish the role that the Practical and Applied Arts courses served to comprehensive high school students. The intent of the interpretation panel was to interpret the survey data and relate the survey data to the research questions.

Demographic Information

Interpretation of Survey Question #1

What is your gender? I found that the number of e-mails distributed reflected a balance in gender, with females receiving slightly more invitations than males (56% compared to 44%). The number of respondents by gender was higher for females, with females accounting for 63% of the responses. Females were more likely to be registered with Classmates.com and females were more inclined to complete the survey.

Interpretation panel. The panel observed females more frequently responded to the questionnaire. This was humorously justified by the belief that females cared more and were more responsible. With further investigation the panel discovered that proportionately there were more e-mails delivered to females so the actual difference in gender response was not important.

Interpretation of Survey Question #2

What is your age? The respondents were between 27 and 30 plus years of age, with 49% of respondents indicating they were 30 years of age or older. Analysis of the age and year graduated suggests respondents graduated on-time.

Interpretation panel. Respondent age was not found to be important.

Interpretation of Survey Question #3

What year did you graduate from high school? The year that respondents graduated reflected a relatively even response distribution. The odd years (1993 and 1995) displayed slightly larger response rates.

Interpretation panel. The panel did not find any importance with these responses, other than there was relatively equal distribution among graduation years.

Interpretation of Survey Question #4

Which high school did you graduate from? Sixty-seven percent of the e-mails were sent to school B. This imbalance was attributed to the fact that there were more students from School B listed on the Classmates.com web-site. This would also reflect the reason why 69% of respondents were from School B. There were more responses from School B, however, given the proportion of e-mails distributed there was only a difference of 2%, which indicated no important difference in response between the two schools.

Interpretation panel. The panel observed greater participation from School B graduates. However, they understood there were also more e-mails distributed to that school population.

Personal Information

Interpretation of Survey Question #5

Please indicate your overall grade twelve average? Eighty-eight percent of the respondents indicated grade twelve averages ranging from 70-100%. There was no important difference between the respondents' averages from the two schools. The averages indicated that few students with lower academic achievement responded to the survey. The reasons for a small representation from students with lower than 70% grade 12 averages would be difficult to explain. However, a higher representation of participation from the lower academic group may have provided richer data. It would be interesting to know what their responses to the questionnaire may have been.

Interpretation panel. It was observed that the grade twelve averages of respondents were high (80-100%). This may perhaps have been attributed to the high

number of females. It was also observed that respondents were “high achievers”, and perhaps someone who does not care to respond may not have achieved well at school.

Interpretation of Survey Question #6

Current employment status? The respondents displayed an employment rate of 92%, with an additional seven percent indicating they were currently a “student”. No one indicated “unemployed”, and six percent of respondents indicated “self employment”. It was observed that all five of the respondents indicating “self employed” came from School B. This may suggest that students from middle class neighborhoods are more likely to achieve self employment.

Interpretation panel. The panel found respondents indicating “self employed” were from school B, however, they were unsure if anything could be read into those numbers.

Interpretation of Survey Question #7

Courses taken in PAA? Survey respondents indicated taking 24 of the 33 courses (73%) listed as PAA. The other courses were not believed to have been offered during the time period.

I observed gender differences in course selection between males and females. Females displayed greater tendencies to enroll in courses such as: Accounting; Clothing, Textiles, and Fashion; Commercial Cooking; Design Studies; Entrepreneurship; Housing; Information Processing; Interior Design; Life Transitions; Photographics; Photography; Graphic Arts; Theatre Arts; and Tourism. Males displayed greater tendencies to enroll in courses such as: Construction and Carpentry; Electrical and Electronics; Machining; Mechanical and Automotive; and Welding. However, there was no important gender

difference between respondents enrolling in Drafting and Computer-Aided Design, and Food Studies. The observed gender differences were similar to the finding of Autio and Hansen (2002) who observed males more interested with machines than females.

The differences between the two schools were not important. However, respondents from school A were seven times more likely to enroll in a career and work exploration program.

Interpretation panel. The panel was amazed by the number of PAA courses available and wished they had all been offered when they attended high school. No other observations were made.

Interpretation of Survey Question #8

Were the marks in your Practical and Applied Arts courses higher than your regular subject marks? Thirty-five percent of respondents indicated that their PAA marks were higher than their regular courses; 13%, indicated they were not; and 44%, indicated that they were basically the same. This would indicate that although people may think that the PAA courses are an "easy credit" the most frequent response from respondents, with grade twelve averages between 70-100%, was that the PAA marks were the same as their regular subject marks.

Interpretation panel. The panel indicated they would not be surprised to see respondents' marks higher in these areas because courses found to be interesting would generate more effort and a desire to learn. "That's what I found too, the classes that I was interested in and these were electives. The Practical and Applied Arts classes I took as interest because I was interested in it and I did better in them, because I was interested in

them" (Female, Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

Interpretation of Survey Question #9

Which of the following best describes your reason for taking these courses? The reasons why students took the PAA courses varied; however, 92% of respondents took the course for either personal reasons and/or curiosity.

Interpretation panel. The panel observed most of the responses were either for curiosity or personal reasons. They discussed their own reasons for taking the PAA courses, which included: interesting, provided experience and exposure to possible careers, as a hobby, fun, exciting, practical, and as a grade nine requirement. The consensus from the panel was that if the PAA courses were not offered, students would not get exposure to these courses. The panel believed that failure to get exposure to PAA courses was undesirable.

Interpretation of Survey Question #10

Would you recommend these courses to other students? Eighty-one percent of respondents indicated that they would recommend PAA courses to other students. This would indicate that there is strong support for the PAA courses. However, one of the respondents indicated no. There was no comment attached to the answer. Analysis of the respondent to establish a profile led to the discovery that the female survey respondent is currently a student, working on a third degree at university, and did not take PAA courses in high school.

Interpretation panel. The panel members were unanimous in their support for these programs and questioned why anyone would not be supportive of them. It is

important that 19% of respondents did not reply to this question. Without comments from the respondents, it is not possible to explain this result.

Interpretation of Survey Question #11

Select the level(s) of education that you have achieved. Only 50 of the 86 respondents reported achieving high school education. Further investigation revealed this was a failure to check the high school box, since 35 of the 36 respondents failing to check the high school box indicated post-secondary degrees. Seventy-three percent of respondents indicated achieving university education: school B, 80%; school A, 60%. Respondents from the inner city school (A) seemed less likely (20%) to attend university and more likely to pursue trades. The actual number of respondents that completed their course of study is difficult to determine since additional comments, pertaining to post-secondary education, were not included by all respondents. This statistic seems high when compared to Statistics Canada's finding that 20% of 18-24 year olds in 1995 chose to attend university full time (Statistics Canada, 1996b).

Interpretation panel. The panel observed only 50% of respondents indicated they completed high school. When, I explained that further examination of the data indicated respondents failed to fill in that response, they agreed that respondents had probably forgotten to indicate that they graduated from high school. The panel members observed that only three respondents indicated journey status and they all came from school A. It was viewed that people work in various trades without their journey status. A panel member stated "There are not a lot of journeymen in the city to begin with. In one field I know, Cabinetry, there are very few that actually get their ticket. They have their hours but they may not go to school [to achieve journey status]" (Female, Interpretation Panel

Participant, and Profile: Took PAA but not working in the area of PAA). The panel suggested this may have attributed to the low number of respondents who indicated journey status. The panel indicated that respondents worked in areas related to PAA while they attended post-secondary education without pursuing journey status.

Interpretation of Survey Question #12

After you graduated from high school did you go on to some form of post-secondary education or did you start work? Of the respondents that indicated attending some form of post-secondary education, following high school graduation, 16 of them also worked. I viewed this to be a particularly high percentage of respondents pursuing post-secondary education. However, I attributed it to the high academic standing of the survey respondents.

Interpretation panel. The panel believed that the high percentage of respondents (79%) who indicated enrolling in post-secondary education may be attributed to their high overall grade averages. The panel also believed that many students take one or more years off, after graduation from high school, before pursuing post-secondary education. This idea created some discrepancy with the findings, because many survey respondents indicated some form of post-secondary education immediately after high school. The panel acknowledged there was a push towards University during 1992-1995, which is believed to still exist.

Interpretation of Survey Question #13

Were you considered to be a student that struggled in regular school classes? The low number of respondents indicating they struggled in high school was interpreted to mean the survey population was not a true representation of the entire student body. If the

survey population had reflected a true representation of all student abilities I believe there may have been more respondents indicating academic struggles. However, the low status associated with PAA courses implies that students who struggled academically take PAA. This study does not indicate this.

Interpretation panel. There was discussion around the definition of "struggled". The panel noted the large percentage of "high achievers" who were respondents in the survey contributed to a small percentage of respondents indicating they struggled in high school.

Interpretation of Survey Question #14

Did you enjoy your Practical and Applied Arts courses more than your regular subjects? I observed: 45% of respondents indicated they enjoyed their PAA course more than the regular subjects; 25% indicated they were either unsure or chose not to answer the question; and 30%, of respondents indicated they did not enjoy the PAA courses. The 30% (26) of survey respondents not enjoying PAA courses more than their other courses puzzled me. The profiles of the 26 respondents indicating "no" were as follows: one, no PAA courses; eight, one PAA course (five respondents had only taken accounting); and 17 had taken two or more PAA courses. I had hoped to be able to establish a reason for the respondents answering "no", however, not knowing whether they continued on with these courses made it difficult to understand their reason for not enjoying their PAA course more.

Interpretation panel. The panel identified they had personally enjoyed the PAA courses more than their regular subjects and thus was shocked that only 45% of respondents indicated they enjoyed the PAA courses more. The panel speculated that

respondents who indicated they did not like the PAA courses may have only taken PAA in grade nine and did not continue on with the courses to the next level.

Education and Employment

Interpretation of Survey Question #15

If you went to some type of post-secondary education indicate the years you were a student? The data displayed an initial enrollment immediately after high school of 65% of respondents. In the proceeding years the level of enrollment declined. The declining rates were 6%, 6%, 2%, 16%, 12%, 3%, an increase of 1%, a decrease of 5%, and then a final decrease of 3% in the tenth year after high school graduation. This indicated to me that respondents may have been moving in and out of levels of post-secondary education. However, further analysis of the data displayed the majority of the respondents stayed with their course of study. When I broke the data down by school I observed that there was a seven percent difference in participation at post-secondary education in favor of school A, which may be explained by the larger number of respondents indicating journey status from school A. Analyzing the post-secondary education data by school indicated a much larger decrease in participation, during the first two years, from respondents who attended school A. As mentioned earlier this may be attributed to greater enrollment in trade and certificate education.

Interpretation panel. The panel observed the data and commented that the decline in the number of respondents enrolled in post-secondary education after five years of graduation could be explained by the fact that most courses of study are under five years in duration.

Interpretation of Survey Question #16

If you went to work directly after high school indicate the years that you have been in full time employment? The data showed 17 (20%) of the survey respondents entering full-time employment after completion of grade 12. In the proceeding years the level of employment generally increased. The second year saw a decrease of 9%, then an increase of 3%, 3%, 3%, 6%, a decrease of 2%, stayed constant, a decrease of 1%, and then a final decrease of 8% in the tenth year after high school graduation. The overall full-time employment levels appear low, when 79 (92%) of survey respondents indicated they were currently employed or self-employed. I find the results of this question difficult to understand when combined with the education results. It appears the question may have been difficult to understand which made the data inaccurate.

Interpretation panel. The panel observed the data; however, little discussion took place.

Interpretation of Survey Questions #17 and 18

Is the employment or education that you have been involved with related to any of your Practical and Applied Arts courses that you took? Did you work or take any further education in any of the areas of Practical and Applied Arts? (the time period from high school graduation to 5 years after high school graduation). I observed that 29 (34%) of the respondents indicated their employment or education was related to PAA courses they had taken. I would speculate the number of respondents indicating “no” may not have taken related courses in PAA in high school, since 32 (37%) of the respondents indicated they had worked or taken further education in areas of PAA.

Interpretation panel. The two questions discussed were observed together. The panel observed that 34% of respondents indicated employment or education related to PAA courses they had taken. This percentage was viewed as important. The panel believed this percentage reflected the importance of the PAA courses. The panel agreed the PAA courses were practical applications of other courses. As well, the panel believed survey respondents may not have indicated their education or employment was related to PAA, but in fact it may have been.

Interpretation of Survey Questions #19 and 20

Is the employment or education that you have been involved with related to any of your Practical and Applied Arts courses that you took? Did you work or take any further education in any of the areas of Practical and Applied Arts? (the time period from 5 years to 10 years after high school graduation). The two questions discussed were observed together. The 3% variation in whether the employment or education that respondents had been involved with was related to any of the PAA courses taken was not considered important. There was nearly a 6% drop in the number of respondents indicating they worked or took any further education in any of the areas of PAA, which may be attributed to the decrease in respondents indicating post-secondary education during that time period.

Interpretation panel. The panel observed a three percent increase in whether employment and education was related to Practical and Applied Arts, and a drop of six percent who indicated they worked or took any education in the Practical and Applied Arts. The increase was not discussed but (also) the decrease was attributed to the belief

that many people are enrolled in various forms of post-secondary education less than five years after they graduated.

Additional Findings

Students who went on to Journey status had taken PAA courses in the following areas: Career and Work Exploration, Commercial Cooking, Construction and Carpentry, Electrical and Electronics, Food Studies, Machining, Mechanical and Automotive, Graphic Arts, Theatre Arts, and Welding.

Students with SIAST or similar education had taken courses in the following areas: Accounting; Auto body; Career and Work Exploration; Clothing, Textiles, and Fashion; Commercial Cooking; Communication Production Technology; Construction and Carpentry; Design Studies; Drafting and Computer-Aided Design; Electrical and Electronics; Entrepreneurship; Food Studies; Housing; Information Processing; Interior Design; Machining; Mechanical and Automotive; Graphic Arts; Theatre Arts; Hospitality; and Entrepreneurship; and Welding.

Students with College education had taken courses in the following areas: Auto body; Career and Work Exploration; Clothing, Textiles, and Fashion; Commercial Cooking; Construction and Carpentry; Design Studies; Drafting and Computer-Aided Design; Electrical and Electronics; Food Studies; Housing; Information Processing; Interior Design; Life Transitions; Machining; Mechanical and Automotive; Photographics; Photography; Graphic Arts; Theatre Arts; and Welding.

Students with University education had taken courses in the following areas: Accounting; Career and Work Exploration; Clothing, Textiles, and Fashion; Commercial Cooking; Construction and Carpentry; Design Studies; Drafting and Computer-Aided

Design; Electrical and Electronics; Food Studies; Housing; Information Processing; Interior Design; Life Transitions; Machining; Mechanical and Automotive; Photographics; Photography; Graphic Arts; Theatre Arts; and Welding.

Students who indicated "other" forms of post-secondary education, which included education ranging from a certificate to a Ph. D., had taken courses in the following areas: Accounting; Career and Work Exploration; Clothing, Textiles, and Fashion; Commercial Cooking; Construction and Carpentry; Drafting and Computer-Aided Design; Electrical and Electronics; Food Studies; Housing; Information Processing; Interior Design; Machining; Mechanical and Automotive; Photographics; Graphic Arts; Theatre Arts; and Welding.

Interpretation Panel Questions

Interpretation Panel Question #1

Given the data from the anonymous questionnaires: What patterns do you see? Would this confirm your experiences? Question one was presented earlier in this Chapter, included with the question by question analysis.

Interpretation Panel Question #2

What is your perception of the Practical and Applied Arts? Do you think the PAA courses are of value to our students/society? The panel expressed positive views towards the Practical and Applied Arts and also emphasized the importance that these courses serve our students. Panel members believed past students may have had exposure to some of these areas of instruction at home. However, it was the view of the panel that many of the present students do not. If PAA courses were not available to students they would not have exposure to these areas as possible career choices.

The PAA courses offer opportunities to students which they would never have exposure to unless they enrolled in PAA courses. A panel member stated “If you don’t have the opportunity to take these Applied Arts classes in high school, you may never know if you are interested in them” (Female, Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

The PAA courses offer experience and exposure to possible future professions. A panel member stated:

> I think they increase the experience. Obviously if you know that you are interested in woodworking and you think that’s what is going to be the trade route that you might want to follow, you’re not going into the profession absolutely blind, you actually have some skills in that area. (Male, Interpretation Panel Participant, and Profile: Took PAA and working in the area of PAA).

The perception was that the PAA courses are beneficial to all students. This was justified because of the current shortage of skilled trades in Saskatchewan. The panel members, similar to respondent comments, believed there is too much of a push for students to further their education at a university and that PAA courses are not encouraged enough.

Many panel participants believed that the PAA courses offer practical information that can be applied to other areas as well. A panel participant stated “if you are not on course for a profession like dentistry or something, you’re going to be using these practical applied arts in some capacity….I think it improves your ability to work” (Male, Interpretation Panel Participant, and Profile: Did not take PAA and working in the area of PAA).

In some cases the PAA courses are an alternative form of learning for students who not excel in the regular classroom setting. A panel member stated:

> I was not good at school. I am not going to pretend like I was. I hated, I hated mainstream school. I excelled a lot more in the practical and applied arts… I think there has to be something out there for everybody. Not everybody wants to go to University. (Female, Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

Panel members believed that if the PAA courses were emphasized more at the high school level students would be exposed to these career related areas, which may assist them in future career or education decisions.

A panel member stated the PAA courses:

> Are very, very important, just because for the simple fact that in my work field, no one, like no one has had any experience… We just weren't pushed to take it [PAA] it was all University. When I got out of high school I went to University. I hated it, absolutely hated it, but I just don't think it's encouraged enough. And I don't think people realize what kind of jobs you can get out of it? … If I had taken drafting in high school. I probably wouldn't have wasted years at University. (Female, Interpretation Panel Participant, and Profile: Did not take PAA and working in the area of PAA).

The panel members believed that even if students do not follow the PAA course to a profession they will at least have the experience as something to fall back on or use as a hobby. "You might not necessarily have a job in that field but you got it, to fall back on and [you] might just do it as a hobby, but it is absolutely necessary" (Female,

Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

A panel member believed that the students at the elementary level need to have more of the PAA courses incorporated into their education. “I think it is important to try to get these opportunities in practical applied arts at a younger age to these kids, such as elementary school” (Male, Interpretation Panel Participant, and Profile: Did not take PAA and not working in the area of PAA).

Interpretation Panel Question #3

What do you feel is the role of Practical and Applied Arts in high school education? The panel members believed PAA courses are practical applications of all the other courses that students take at school. The PAA courses provide exposure to possible career paths, but also offer students the variety that they need, in terms of varied learning styles and hands-on applications. A panel member stated:

> The role as it is right now, I guess I’d have to go back to what [a panel member] was saying, is that it shows the applied, what the Math is for, what the English is for, what the Science is for. How you can actually apply it to the work experience as well. I never thought of it that way until [a panel member] brought it up here. It makes more and more sense to me now. (Male, Interpretation Panel Participant, and Profile: Did not take PAA and not working in the area of PAA).

A panel member stated that the PAA courses “increases experience and reinforces knowledge [by] applying PAA courses to other areas” (Male, Interpretation Panel Participant, and Profile: Took PAA and working in the area of PAA).

Interpretation Panel Question #4

In what ways do you think the Practical and Applied Arts influence our student's lifelong learning? At this question, panel members became invigorated. They believed that PAA courses teach practical life skills to be used throughout life. A panel member stated "I don't think the PAA courses can ever be a waste of time…the information that you get …really you'll use that for the rest of your life… it has influenced my life a lot… my lifelong learning is revolved directly around PAA" (Male, Interpretation Panel Participant, and Profile: Took PAA and working in the area of PAA).The PAA courses may not influence a person to follow a related career but the knowledge learned can be applied to other areas of learning and may in fact lead to a hobby or employment to fall back on. Without exposure to these courses in high school a person may not ever consider these potential careers. A panel member stated:

> It's [PAA] practical and you can apply it to life, all those things that you're learning, you can apply to what you are doing, directly in your life. So, like you said, you do it on the side, it's your hobby, you might sew a little bit, or you might do some cooking for other people. Or, you know it's an interest outside of your work. Like if you don't have interests outside of work, you're not happy. So, it's kind of a Catch 22. (Female, Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

Interpretation Panel Question #5

What role do you think practical and applied arts play in our students' literacy for life? This question also invigorated the panel members. They had much to say. The panel believed the PAA courses may serve to keep students in school. If students enjoy the

classes and are interested in them they will want to learn more about a particular area of study. A panel member stated:

> These [PAA] courses could keep them [students] interested in being in school, but also… some of these kids might like to, or enjoy reading manuals, therefore they are reading…The ability to read manuals and how to put engines together, whatever it may be. (Male, Interpretation Panel Participant, and Profile: Did not take PAA and not working in the area of PAA).

Panel members believed that the learning experienced in a PAA course allows students to learn other information easier. "You could almost put a parallel towards some of these … How you learn a computer program, and that learning of literacy allows you to learn something else easier" (Male, Interpretation Panel Participant, and Profile: Did not take PAA and working in the area of PAA).

Panel members believed that students who do not enjoy reading may be influenced by PAA courses to read more. A panel member stated "I don't read for leisure… but I do make time to read the things that I'm totally interested in … I think a lot of the kids at school are like that too" (Female, Interpretation Panel Participant, and Profile: Took PAA but not working in the area of PAA).

Related Comments

The interpretation panel participants were given the opportunity to make additional comments at the end of the panel discussion. After 90 minutes of discussion the panel members believed their opinions and questions had already been voiced.

Summary

This chapter interpreted the survey results and the interpretation panel questions. The members of the interpretation panel examined the data in light of each of the five research questions.

CHAPTER SIX

THEMES, CONCLUSION, AND RECOMMENDATIONS

Introduction

This chapter establishes themes related to the main research questions, concludes the thesis, and makes recommendations for future research.

Themes

Analysis of the data led to the emergence of themes related to each of the main research questions. The themes were based on the frequency of given responses.

Themes Related to Research Question Number One

Research question number one stated “What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?” The themes that emerged from this research question included: The type of student enrolled in PAA courses, the difference in use of PAA based on school climate, and practical skills you can use throughout life.

The Type of Student Enrolled in PAA Courses

The type of student enrolled in PAA courses varied. In grade nine all students were required to complete some form of PAA, beyond that it was optional. Both male and female students were enrolled in PAA courses, with males more inclined to take courses which incorporated the use of machines, which was also the finding of Autio and

Hansen (2002). The overall grade average of respondents in correlation with employment and further education in areas of PAA may suggest that the PAA courses are not just for slower learners, a finding also of Gray (2004). Gray looked at the way Career and Technical Education was viewed by society as only preparing students how to get a job, or designed for potential drop outs and slow learners. The results from my research showed that it was not just the slow learners or drop outs that are taking PAA courses. Rather, students with a wide range of academic levels were enrolled in these courses and after graduation 37% were either working or taking further education in areas of PAA.

The Difference in Use of PAA Based on School Climate

The difference between the uses of PAA based on school climate was not important. This is contrary to the finding of Levesque (2003b) who discovered disadvantaged students were more likely to participate in vocational/technical education courses. However, the difference between the two schools showed survey respondents from the inner city comprehensive high school as the only ones obtaining journey status and more frequently enrolled in career and work exploration courses. In comparison, the survey respondents from the middle class comprehensive high school more frequently enrolled in graphic arts. The students from the middle class comprehensive high school were the only respondents reporting self-employment. Numbers are small in all cases, thus no conclusions can be drawn. However, these preliminary results indicate socio-economic class might play a role.

Practical Skills You Can Use Throughout Life

The profile of respondents indicated that the skills learned in the PAA courses were viewed as useful throughout life. If a student did not use the PAA courses directly

in their area of education or employment the skills learned in the areas may still be beneficial to them. They may use the knowledge learned as a hobby or the related skills may apply to other areas of education or employment.

Summary of Themes Related to Research Question Number One

The profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools were described as having overall high grade averages, which was contrary to the view of society. The difference in use of PAA based on school climate varied from course to course, however, observation of all PAA courses found only small variations between the two schools. The PAA courses were described as practical skills you can use throughout life.

Themes Related to Research Question Number Two

Research question number two stated "What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?" The survey data indicated that respondents continued education in the following areas: Journey status, three (3.5%); SIAST or similar, 13 (15%); College, 11 (13%); University, 63 (73%); and other, 12 (14%). The survey data indicated that 31-37% of survey respondents indicated either working or taking education in areas related to PAA. The interpretation panel viewed this as important since the majority of surveyed respondents indicated high academic averages. Thus, PAA courses are not designed for drop outs and slow learners as Gray (2004) suggested. The themes that emerged from this research question included: The role of PAA in post-secondary education, and the role of PAA in employment.

The Role of PAA in Post-Secondary Education

The PAA courses have been identified to contribute to post-secondary education in many ways. The survey results showed that PAA courses provide experience and exposure in career related fields, which may lead to further education in a related area; which were goals described by Lynch (2000) and Lewis (1998). PAA courses generate more effort and a desire to learn because students are interested in the courses, which may provide motivation to pursue further learning. It was also observed that PAA courses act as a starting point for future learning. The PAA courses are applications of other subject areas that students take. Whatever the level of exposure to PAA courses is, all panel participants and many survey respondents believe the courses benefit all students. Hardy (2000) concurred, discovering the confidence students acquired through learning stimulated them to pursue further education and training.

The Role of PAA in Employment

The role of the PAA courses in employment would be very similar to the role that they serve the students who pursue post-secondary education. Employment involves varying forms of further education, both formal and informal. Some of the PAA courses provide on the job experience in a job setting through the career and work exploration course or as work study component of a PAA course. The literature described students attending technical/trade programs will, in less time and at less cost to them, be more likely to find employment than university grads (Mupinga & Livesay, 2004; Unger, 1992).The awareness of various trades and a combination of both theory and hands-on experience in these courses simulate real-life experiences for students.

Summary of Themes Related to Research Question Number Two

The PAA courses serve as a stepping stone to both post-secondary education and employment. With the number of survey respondents (grade averages between 70-100%) indicating 31-37% either working or taking education in areas related to PAA the PAA courses have made important contributions to the education of our students.

Themes Related to Research Question Number Three

Research question number three stated "To what extent did the Practical and Applied Arts subjects influence students' future career choices?" The themes that emerged from this research question included: exposure and experience, hands-on learning approach, and builds confidence.

Exposure and Experience

The PAA courses provide exposure to a different learning style (one which incorporates theory with practical applications) and possible career options. The ability to experience these varied career options was viewed as necessary for all students, at the high school level. The exposure to PAA courses may help students experience what some of the different careers involve, that is available to them after high school graduation, this result concurs with Lynch (2000) and Lewis (1998). Exposure to a wide range of these PAA courses assists students in finding their strengths and weaknesses.

Hands-On Learning Approach

The hands-on learning approach of PAA courses appeals to many students. Similar to the finding of Upitis (2001), survey respondents and the interpretation panel believed the ability to have education with a hands-on component was desirable for students. My research revealed that this approach is not restricted to slower learners or

students that “struggled” in high school. Hill and Smith (1998) explained how a PAA course provided hands-on learning for the students, the students were highly motivated, and they rarely skipped the class.

Builds Confidence

The PAA courses provide a practical approach to learning. For some students this approach is different than some of the regular subject areas. It was believed if a student did not experience success in regular courses but did excel in areas which had a practical component he/she may experience an increase in confidence. This increased confidence in a school subject area may lead to further education in that area and motivation to work harder in other areas. This was also the finding of Hardy (2000) who described the confidence that students acquired through learning stimulated many students to pursue further education and training.

Summary of Themes Related to Research Question Number Three

The Practical and Applied Arts subjects were found to influence students’ future career choices by providing exposure and experience to various career related courses. The hands-on learning approach incorporates theory with a practical component. The PAA courses are suitable for a wide range of learning styles which make them applicable to all students. This combination of theory and hands-on education was found to build confidence in students which then may encourage them to pursue further education.

General Themes

The general themes that emerged from this research included: Why wouldn’t you take PAA courses?, PAA courses can.., PAA courses are…, Life long learning, Literacy for life, and Issues related to PAA courses.

Why Wouldn't You Take PAA Courses?

The research indicated there were societal and parental pressures for students to attend university. Survey respondents and panel participants believed that high school is geared towards students continuing their education at a university level. Unger (1992) concurred and believed students should not enroll in a university simply because others want or expect them to. This was described by an interpretation panel member as being the case where the push was to go to university and that was not where his/her area of interest was. There was also a comment that there is too much emphasis on math and the science courses. Mupinga and Livesay (2004) believed "it may not be worth initially pursuing a four-year degree when a one or two-year program will do" (p. 1). These same views were echoed by the interpretation panel as well.

The PAA courses are often viewed as "blue collar work". It was viewed that society does not value this type of education or work. As a result, students are not encouraged to take these courses. Lyons et al. (1991) described the prejudice against vocational education. The survey results and the views of the interpretation panel indicated that the prejudice still exists. This prejudice was also observed by Koontz (2000) who described that the image of a precision machinist is not an image most parents want their son or daughter involved with.

PAA Courses Can...

The PAA courses were found not only to give students exposure to varied careers but also to provide options. These experiences may lead to possible future employment. This opportunity to experience different types of jobs was viewed as valuable; this would also be concurred by Lynch (2000) and Lewis (1998). It was believed that if students

were not exposed to these learning opportunities through the PAA courses they may not experience these areas later in life.

The PAA courses may be used in the form of a hobby or as something to fall back on later in life. This is something the literature did not discuss but I believe it to be a benefit of the PAA courses. It was believed that if students are exposed to areas of PAA at a young age it may be easier to attract them to the areas. Respondents believed the PAA courses influence future career decisions and have helped some students stay in school. Hill and Smith (1998) concur, describing students in PAA courses as highly motivated and rarely skipping the class. Boser et al. (1998) believed that if students have a tendency to act positively toward a subject then students will have more of an interest in that subject. This was the case that I found in my study.

PAA Courses Are…

The PAA were viewed by survey respondents and interpretation panel participants to be: more exciting than regular subjects; interesting; fun; practical; captivating students' attention; confidence building; absolutely necessary; hands-on; an alternative to compulsory subjects; relevant to real life; providing a practical approach to education; suitable for males and females; generating more effort and a desire to learn; providing experience and exposure; practical applications of other courses; and, an alternate form of learning for students who do not excel in the regular classroom setting. These views were all repeatedly concurred in the literature review.

Life Long Learning

The PAA were described as a starting point for future learning. They were viewed as providing practical life skills for a whole life. The knowledge learned can be applied to

other areas (education, leisure, and career oriented).The PAA courses were described as increasing experience and reinforcing knowledge.

Literacy For Life

The PAA were found to involve various forms of communication. Survey respondents, supported by the interpretation panel participants, believed that literacy goes beyond reading and writing. Petrina (2000) concurred, believing technological literacy is one of the intended outcomes of technology education. The interpretation panel found that technological literacy played a role in the PAA courses. Lewis (1993) concurred, believing that practical arts promote literacy. The PAA courses enable students to learn something else easier. Students in PAA courses may be influenced to read more since they enjoy or are interested in the area. Survey respondents and interpretation panel participants believed the PAA courses may serve to keep students in school, if this is the case then students will also be learning in their other courses. Gagel (2002) believed that people view the technologies as an area that requires little literacy when technology actually enhances and promotes literacy. This was also the view of the interpretation panel.

Issues Related to PAA Courses

There are several issues related directly or indirectly to the PAA courses. The interpretation panel identified the inability to hire employees with trade experience. This was also the finding of Bordt et al. (2001) who described the shortage of skilled workers in the skilled trades. The fact that there are few journey persons indicates that there is a need for skilled trades persons.

Lynch (2000) and Lewis (1998) believed all students should complete some form of career and technical education or at least be exposed to vocational education. This was also the view of many of the survey respondents and confirmed by the interpretation panel in my research.

Lewis (1993) believed "the practical arts have languished because as a class they do not conform to the traditional view of what constitutes valid knowledge" (p. 175). This was also the view of the interpretation panel.

Castellano et al. (2003) believed educational decisions are made without proper consultation of research into the area. It was believed that the failure for PAA courses to be awarded greater merit is attributed to the lack of research, and acknowledgment of PAA as valuable learning. This is also reflected in Lewis (1999a) where he believed there is need for further research in the area of PAA.

Summary of General Themes Related to PAA Courses

The general themes that emerged from this study were possibly applicable to more than one research question. Given the survey results and the interpretation from the interpretation panel, supported by the research, it would seem that all students should take PAA courses because they have so much to offer to our students. The majority of students enjoyed their PAA courses enough to recommend them to others. However, there were students who declined to respond to this question and one who reported with no. This indicates that there were students who did not enjoy their PAA experience and would not recommend the PAA courses to others.

Unfortunately, society's current perceptions of PAA, trades people versus a university education, means student choices will not be "free". Society's view of PAA

must change. Despite the perceptions that PAA and trades are inferior to university, this survey showed students taking PAA had, generally, high academic averages. Further, the vast majority of the respondents went on to university. Obviously, PAA is not just for those who cannot do well in academic courses, nor is it merely for job training. PAA courses can provide a different style of learning for a student which was viewed positively in this research.

PAA courses have something to offer all students. The nature of the PAA courses is such that they provide life long learning skills. The exposure to these courses contributes to the literacy of the student. As in most areas of instruction there are issues related to PAA courses. The greatest issue is that the PAA courses have not been valued by society when there is such a shortage of skilled trade's workers in our country.

Conclusion

This study has brought out some interesting findings. The PAA courses were found to cater to a wide range of academic achievement and not just to "slow learners" or "at-risk" students, as some may think.

The literature told us that the Practical and Applied Arts courses have historically been funded based on industrial crises. The cyclical effect of supplying skilled trades workers in times of need may be reduced by a change in the societal image of the trades. Many students who have graduated who go on to university have often done so because of societal and parental pressures, instead of personal interest.

High school Practical and Applied Arts courses have influenced students' life long learning by providing exposure to different forms of learning. The Practical and Applied Arts courses provide hands-on experiences involving problem-solving, literacy, numeracy, and cognition which can only promote students' literacy for life. There is a need for more research into the Practical and Applied Arts to demonstrate the benefits from this area of instruction.

The survey respondents' data, from the two schools representative of mid-sized Western Canadian cities, showed valuable information relevant to the role of the PAA courses. The difference in use of PAA based on school climate varied from course to course, however, observation of all PAA courses found only small variations between the two schools. There was evidence that survey respondents selected different courses based on gender. The profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools were described as having overall high grade averages,

which was contrary to the view of society. Respondents not using the knowledge learned in the PAA courses still saw their value and often used those skills later in life.

The PAA courses served as a stepping-stone to both post-secondary education and employment. The Practical and Applied Arts subjects provided exposure and experience to various career related courses. The hands-on learning approach incorporates theory with a practical component. The nature of the PAA courses is such that they provide life long learning skills. The exposure to these courses attributes to the literacy of the student.

In the future there will still be issues related to PAA courses. The current issue is that the PAA courses have not been valued by society when there is such a shortage of skilled trades workers in our country. Although the PAA courses are not designed to create trades people, they do provide exposure and experience to some of the trades.

I believe Lewis' (1993) view of the secondary curriculum accurately describes the view of society when he stated "the liberal curriculum has become an efficient, convenient way to sort children for their roles in society" (p. 197). However, this study revealed this should not be the case. This study also showed that PAA courses are designed for all students and not just "at-risk" students.

Recommendations

The results of this research have led to numerous recommendations. The recommendations are as follows:

1. There is need for follow up research to establish the influence of courses offered to students in our educational system while the students are taking these courses.
2. Research should be conducted to compare the outcome of student education and employment from both comprehensive and non-comprehensive high schools.
3. Saskatchewan Learning should make provisions to survey all graduates to determine what happens to them after high school.
4. Research should explore the negative view towards “blue collar” work to see what improvements could be made to validate Practical and Applied Arts courses as valid knowledge.
5. Qualitative Research is required to determine the value of PAA courses for students electing to take them, as well, the value of PAA courses to graduates.
6. Quantitative research is required from Saskatchewan Learning and school divisions to determine the profile of students taking PAA courses. This could include surveys to determine what happens to graduates post high school.

REFERENCES

Autio, O., & Hansen, R. (2002). Defining and measuring technical thinking: Students' technical abilities in Finnish comprehensive schools. *Journal of Technology Education*, *14*(1). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v14n1/autio.html

Bordt, M., de Broucker, P., Read, C., Harris, S., & Zhang, Y. (2001). Determinants of science and technology skills: Overview of the study. [Electronic version]. *Education Quarterly Review*, *8*(1), 8-11.

Boser, R. A., Palmer, J. D., & Daugherty, M. K. (1998). Student attitudes toward technology in selected technology education programs. *Journal of Technology Education*, *10*(1). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v10n1/boser.html

Brown, W. (2000). A comparison of selected outcomes of secondary tech prep participants and non-participants in Texas. *Journal of Vocational Education Research*, *26*(1). Retrieved May 20, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v25n3/brown.html

Camp, W. (2001). Formulating and evaluating theoretical frameworks for career and technical education research. *Journal of Vocational Education Research*, *26*(1). Retrieved May 20, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v26n1/camp.html

Canada Millennium Scholarship Foundation. (2006). The price of knowledge 2004: Saskatchewan. Retrieved June 2, 2006, from http://www.millenniumscholarships.ca/en/research/poksk.asp

Cajas, F. (2000). Research in technology education: What are we researching? A response to Theodore Lewis. *Journal of Technology Education, 11*(2). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v11n2/cajas.html

Castellano, M., Stringfield, S., & Stone, J. R. III. (2003). Secondary career and technical education and comprehensive school reform: Implications for research and practice. *Review of Educational Research, 73*(2), 231-72. Retrieved February 21, 2005, from Wilson Web database.

CTV News. (2005, January 30). Shortage of Cdn. Skilled trade workers: gov't. *CTV .ca News Staff*. Retrieved September 18, 2005, from http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1107034849248_2/?hub=TopStories

Cui, W. W. (2003). Reducing error in mail surveys. *Practical Assessment, Research & Evaluation, 8*(18). Retrieved May 17, 2005, from http://PAREonline.net/getvn.asp?v=8&n=18

Frary, R. B. (1996). Hints for designing effective questionnaires. *Practical Assessment, Research & Evaluation, 7*(19). Retrieved April 29, 2005, from http://PAREonline.net/getvn.asp?v=5&n=3

Gagel, C. W. (2002). Literacy and technology: Reflections and insights for technological literacy. *Journal of Industrial Teacher Education, 34*(3). Retrieved February 25, 2005, from http://scholar.lib.vt.edu/ejournals/JITE/v34n3/Gagel.html

Gall, J. P., Gall, M. D., & Borg, W. R. (2005). *Applying educational research: A practical guide.* (5th ed.). Boston, MA: Pearson Education, Inc.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction.* (6th ed.). White Plains, NY: Longman Publishers USA.

Gray, K. (2004). Is high school career and technical education obsolete? *Phi Delta Kappan*, 86(2). Retrieved February 20, 2005, from http://www.pdkintl.org/kappan/k_v86/k0410gra.htm

Griffiths, J., & Wade, J. (2001). The relation of high school career-and work-orientated education to postsecondary employment and college performance: A six-year longitudinal study of public high school graduates. *Journal of Vocational Education Research*, *26*(3). Retrieved May 20, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v26n3/griffith.htm

Hansen, S., & Reynolds, C. J. (2004). The future of industrial technology education at the K-12 level. *Journal of Industrial Teacher Education, 40*(4). Retrieved February 25, 2005, from http://scholar.lib.vt.edu/ejournals/JITE/v40n4/hansen.html

Hardy, M. (2000). From vocational education and training to work: Representations from two occupational areas. *Journal of Vocational Education Resaearch, 25*(1). Retrieved March 18, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v25n1/hardy.html

Hill, A. M., & Smith, H. A. (1998). Practice meets theory in technology education: A case of authentic learning in the high school setting. *Journal of Technology Education*, *9*(2). Retrieved March 12, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v9n2/hill.html

Jones, A., & Moreland, J. (2002). Technology education in New Zealand. *Journal of Technology Studies, 28*(1/2). Retrieved March 12, 2005, from http://proquest.umi.com/pqdweb?did=37487271&Fmt=3&clientld=12306&RQT=309&VName=PQD

Koontz, P. (2000). Build it and they will come: Addressing the problem of declining entry level skills. *Tech Directions, 59*(8), 23-28. Retrieved February 18, 2005, from Wilson Web database.

Levesque, K. (2003a). Trends in high school/technical coursetaking: 1982-1998. *Educational Statistics Quarterly, 5*(2). Retrieved March 12, 2005, from http://nces.ed.gov/programs/quarterly/vol_5/5_2/q3_3.asp

Levesque, K. (2003b). Public high school graduates who participated in vocational/technical education: 1982-1998. *Educational Statistics Quarterly, 5*(3). Retrieved March 12, 2005, from http://nces.ed.gov/programs/quarterly/Vol_5/5_3/3_2.asp

Lewis, T. (1993). Valid knowledge and the problem of practical arts curricula. *Curriculum Inquiry, 23*(2). 175- 202.

Lewis, T. (1995). From manual training to technology education: the continuing struggle to establish a school subject in the USA. *Journal of Curriculum Studies, 27*(6). 621-645.

Lewis, T. (1998). Vocational education as general education. *Curriculum Inquiry, 28*(3), 283-309. Retrieved March 12, 2005, from EBSCO HOST database.

Lewis, T. (1999a). Research in technology education-some areas of need. *Journal of Technology Education, 10*(2). Retrieved February 25, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v10n2/lewis.html

Lewis, T. (1999b). Content or process as approaches to technology curriculum: Does it matter come Monday morning. *Journal of Technology Education, 11*(1). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v11n1/lewis.html

Lynch, R. L. (2000). High school career and technical education for the first decade of the 21st century. *Journal of Vocational Education Research, 25*(2). Retrieved March 18, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v25n2/lynch.html

Lyons, J. E., Randhawa, B. S., & Paulson. N. A. (1991). The development of vocational education in Canada. [Electronic Version]. *Canadian Journal of Education. 16*(2), 137-150.

Matusky, J. G. (2001, October). Retention efforts take hold. *University Affairs*, 19-22.

Mupinga, D. M., & Livesay, K. (2004). Consider vocational-technical education for post-secondary education. *The Clearing House, 77*(6), 261-63. Retrieved February 21, 2005, from Wilson Web database.

Noonan, B. (2002). Interpretation panels and collaborative research, *Brock Education*, *12*(1), 89-100.

Petrina, S. (2000). The politics of technological literacy. *International Journal of Technology and Design Education, 10*(2), 181-206.

Petrina, S., & Dalley, S. (2003). The politics of curriculum reform in Canada: The case of technology education in British Columbia. *Canadian Journal of Science, Mathematics and Technology Education, 3*(1), 117-144.

Reed, P. A. (2002). Research in technology education: Back to the future. *Journal of Technology Education, 13*(2). Retrieved March 3, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v13n2/reed.html

Sanders, M. (2001). New paradigm or old wine? The status of technology education in the United States. *Journal of Technology Education, 15*(2). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v12n2/sanders.html

Saskatchewan Education. (1987). Comprehensive education: A challenge for Saskatchewan. *Report of the Technical-Vocational Education/Comprehensive High Schools Review Committee*. Regina, Saskatchewan: Saskatchewan Education.

Saskatchewan Learning. (2003a). *Practical and applied arts information bulletin*. Retrieved March 03, 2005 from http://www.sasked.gov.sk.ca/docs/paa/infobul/index.html

Saskatchewan Learning. (2003b). Program considerations. *Practical and applied arts handbook*. Retrieved March 03, 2005, from http://www.sasked.gov.sk.ca/docs/paa/PAAHandbook/progcon.html#cou

Saskatchewan Learning (2004). *Saskatchewan education indicators*. Retrieved May 20, 2005, from http://www.sasklearning.gov.sk.ca/branches/cap_building_acct/afl/docs/indicators/2004.pdf

Solomon, D. J. (2001). Conducting web-based surveys. *Practical Assessment, Research & Evaluation, 7*(19). Retrieved April 29, 2005, from http://PAREonline.net/getvn.asp?v=7&n=19

Statistics Canada. (1996a). 1996 Census: Labour force activity, occupation and industry, place of work, mode of transportation to work, unpaid work. Retrieved March 03, 2005, from http://www.statcan.ca/Daily/English/980317/d980317.htm

Statistics Canada. (1996b). The Daily. Monday, January 8, 1996. Retrieved March 11, 2006, from http://www.statcan.ca/Daily/English/960108/d960108.htm#ART1

Statistics Canada. (2001). 2001 Census: Population 15 years and over by highest degree, certificate or diploma, by province and territory. Retrieved May 18, 2006, from http://www40.statcan.ca/cgi-bin/getcans/sorth.cgi?lan=eng&dtype=fina&filename=educ41b.htm&sortact=2&sortf=6

Statistics Canada. (2003a). Highlights: Report of the Pan-Canadian Education Indicators Program 2003. Retrieved March 26, 2005, from http://www.statcan.ca/english/freepub/81-582-XIE/2003001/highlights.htm#D

Statistics Canada. (2003b). Education indicators in Canada: Report of the Pan-Canadian Education Indicators Program 2003. Retrieved June 3, 2006, from http://www.statcan.ca/english/freepub/81-582-XIE/2003001/pdf/81-582-XIE03001.pdf

Stone, J. R. III., Kowske, B. J., & Alfeld, C. (2004). Career and technical education in the late 1990s: A descriptive study. *Journal of Vocational Education Research, 29*(3). Retrieved May 20, 2005, from http://scholar.lib.vt.edu/ejournals/JVER/v29n3/stone.html

Unger, H. G. (1992). College Isn't for Everyone, *But what if I Don't Want To Go To College? A Guide to Success Through Alternative Education* (pp.3-25). New York, NY: Facts On File, Inc.

University of Saskatchewan Office of Research Services. (2003, September 26). *Consent Form Guidelines and Templates*. Retrieved May 10, 2005, from http://www.usask.ca/research/ethical.shtml

Upitis, R. (2001). Girls (and boys) and technology (and toys). *Canadian Journal of Education*, *26*(3). Retrieved March 4, 2005, from http://proquest.umi.com/pqdweb?did=636286501&sid=4&Fmt=3&clientld=12306&RQT=309&VName=PQD

Volk, K. (2003). Defining technology's past. *The Technology Teacher*, *62*(6), 7-10. Retrieved February 21, 2005 from Wilson Web database.

Volk, K. S. (1996). Industrial arts revisited: An examination of the subject's continued strength, relevance and value. *Journal of Technology Education*, 8(1). Retrieved March 03, 2005, from http://scholar.lib.vt.edu/ejournals/JTE/v8n1/Volk.html

Wolf, R. M. (1997). Questionnaires. In J. P. Keeves (Ed.), *Educational Research, Methodology, and Measurement: An International Handbook* (pp.422-427). White Plains, NY: Longman Publishers USA.

Yamazaki, S., & Savage, E. (1998). Views of technology Education in Canada and the United Kingdom. *The Journal of Technology Studies*, *24*(1). Retrieved March 4, 2005, from http://scholar.lib.vt.edu/ejournals/JOTS/Winter-Spring-1998/yamazaki.html

Young, D. R. (1992). An historical survey of vocational education in Canada (2nd ed.). Concord, Ontario: Captus.

Young, D. R., & Machinski, A. V. (1972). An historical survey of vocational education in Canada. *Canadian Vocational Journal. 8*(3), 10-28.

Young, D. R., & Machinski, A. V. (Winter, 1972-73). An historical survey of vocational education in Canada. *Canadian Vocational Journal. 8*(4), 4-25.

APPENDICIES

APPENDIX A

Ethics Application and Approval

Behavioural Research Ethics Board (Beh-REB)

APPLICATION FOR APPROVAL OF RESEARCH PROTOCOL

---

1. **Researcher:** Arnold Neufeld, Department of Curriculum Studies, College of Education
   Supervisor: Dr. Janet McVittie, Department of Curriculum Studies, College of Education

1a. **Student:** Arnold Neufeld, to fulfill M. Ed requirements.

1b. **Anticipated start date of the research study will be November ___ , 2005 and the expected completion date of the study will be June 30, 2006.**

2. **Title of Study: The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students**

3. **Abstract**

The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on randomly selected comprehensive high school students. The research will provide a profile of comprehensive high school students, for the period ten-years after graduation. The research will examine the reasons for students taking the courses, and the relationship between the courses and career and education choices, over a ten-year period. Data will be collected by a mail questionnaire and analyzed using descriptive statistics. The results of this study should assist educators and society in the acknowledgement of the important role that the Practical and Applied Arts can have on high school students.

The specific research questions are:

1) What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?
2) What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?
3) To what extent did the Practical and Applied Arts subjects influence students' future career choices?

4. Funding:

No funding has been granted for this research. The researcher will cover all costs (photocopying and other incidentals).

5. Expertise:

Not applicable.

6. Conflict of Interest:

There are no conflicts of interest. The publication or distribution of the findings will be limited to the Saskatoon Public School Division and the University of Saskatchewan.

7. Participants:

The participants chosen in this study will be randomly selected from two public comprehensive high schools in mid-sized Western Canadian cities. School A is an inner city comprehensive high school. School B is a middle class comprehensive high school. The comprehensive high schools are selected because they have a population in excess of one thousand students and they offer the greatest selection of practical and applied arts courses available.

From the alumni association records, obtained from the ten-year graduation organizers, I will make a random gender-balanced selection of two hundred student names that received their high school graduation diploma in a given time period. To establish the random sample a personal computer would select two hundred students from the graduation lists from 1992, 1993, 1994, and 1995. The reason for selecting these years is that they would reveal a random sample that has graduated at least ten years ago. The four years would also contain a significant number of graduates for the study.

The time period gives the students the chance to have tried a variety of work and education related experiences. To eliminate any power relationship that may exist I have chosen a sample group that would not know me or have had me as an instructor.

The random sample will be generated from graduate lists, from the alumni associations, of the two schools involved. The most current addresses from the ten-year graduation reunions will be used to establish contact with potential participants. The graduates will be sent out the voluntary questionnaire. The returned, completed questionnaire will signify their consent to participate in the study.

There is no concern of coercion, because there is no position of power relative to the participant in the study. Participation in the study is on a volunteer basis.

The privacy and anonymity of participants would be ensured at all times.

7a. The recruitment material/letter of invitation is included as an Appendix (see Appendix A).

8. Consent: Participation is voluntary; participants may refuse to answer individual questions if they choose. Completion of the mail, or web-based questionnaire indicates the participants' consent in the study (see Appendix A & B).

9. Methods/Procedures:

Each of the graduates in the random sample will receive a survey package through Canada Post. The survey packages will include a cover letter with instructions, which state that by completing the survey, respondents are giving their consent. The anonymous survey responses will be returned in the self-addressed envelope, or they can complete the questionnaire, anonymously, on the website, located at www. _____. The questionnaire will be mailed out to the graduates, using the records from the alumni associations. The questions in the questionnaire are quantitative in nature (see Appendix B). The questionnaire consists of 20 questions, and will take approximately five minutes to complete. The results of their answers would be analyzed to identify trends.

10. Storage of Data:

All of the research data including original survey responses, and any supporting correspondence and documentation will be securely stored for a minimum of five years by the researcher's supervisor, Dr. Janet McVittie in the Department of Curriculum Studies, College of Education, at the University of Saskatchewan. During the study, the data will be stored in a locked cabinet in the researcher's home.

11. Dissemination of Results:

The results of this research study are for the primary use of completing the researcher's thesis in completing the requirements for a M. Ed degree. Other uses of the data analysis in the thesis may be for the future publishing of articles in academic or professional journals or for future presentations at conferences. Presentations may also be made in the College of Education (Education Curriculum 994 Master's thesis presentations) at the school, division, and provincial levels. All identifying information of the site or the participants will be protected by the researcher and will not be used in the thesis or other articles.

12. Risk, Benefits, and Deception:

There is no risk or deception of the participants in this study. The participant will indicate their consent to participate in this study by returning the completed questionnaire, or completing the web based questionnaire, located at www._____ (see Appendix B). If the Web-based method is selected for submitting the questionnaire the participant is responsible for any risks associated with transmitting information via E-mail. Due to the use of a public server anonymity and confidentiality cannot be assured.

The potential benefits of the research are that the results of the study will generate statistical data on the role of the Practical and Applied Arts, at the high school level. These results may influence decisions that are made, in respect to the education of our future students.

There is no potential risk to the participants in the study. The confidentiality and anonymity of the participants will be maintained at all times. At the completion of the study participants will have the opportunity of accessing the results of the study, upon request.

13. Confidentiality:

The confidentiality and anonymity of each of the participants and his or her respective school will be protected. Confidentiality of all survey data will be assured. No names or other means of identification will be used in any printed or published reports. Anonymity will be ensured through the use of pseudonyms. Given the size of the population it would be impossible to identify an individual participant.

14. Data/Transcript Release:

The participants will receive a copy of the results of the study, upon request to the researcher.

15. Debriefing and feedback:

Information on the results of the research will be made available to the participants, upon request, once the study has ended. The participants will be informed of the publication of the thesis and the ways of accessing the thesis. The final thesis will be provided to the University of Saskatchewan, the Saskatoon Public School Division, and anyone who indicates the desire for a copy.

16. Required Signatures:

_____	_____	_____
Arnold Neufeld	Dr. Janet McVittie	Dr. Barry Brown
Student Researcher	Research Supervisor	Department Head

17. Contact Names and Information:

Arnold Neufeld
713 McPherson Avenue
Saskatoon, Saskatchewan
S7N 0X9
Phone: (306) 244-2489 (home)
E-mail: avneufeld@sasktel.net

Dr. Janet McVittie
Department of Curriculum Studies
College of Education
University of Saskatchewan
28 Campus Drive
Saskatoon, Saskatchewan
S7N 0X1
Phone: (306) 966-7582(work)
E-mail: janet.mcvittie@usask.ca

University of Saskatchewan
Behavioural Research Ethics Board (Beh-REB)

13-Oct-2005

Certificate of Approval with Minor Modifications

PRINCIPAL INVESTIGATOR
Janet McVittie

DEPARTMENT
Curriculum Studies

BEH#
05-242

STUDENT RESEARCHER(S)
Arnold Neufeld

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED (STUDY SITE)
University of Saskatchewan

SPONSOR
Unfunded

TITLE
The Influence of Practical and Applied Arts on Randomly Selected Comprehensive High School

ORIGINAL APPROVAL DATE
11-Oct-2005

CURRENT RENEWAL DATE
01-Oct-2006

CERTIFICATION

Thank you for submitting the above application to the Behavioural Research Ethics Board for review. The Beh-REB has **approved** your research proposal on ethical grounds.

- Please revise the consent form to include a statement pertaining to the risks associated with transmitting information via email. Due to the use of a public server anonymity and confidentiality cannot be assured.
- Please explain how you will acquire the alumni lists.
- Please revise the consent form to include a statement that acknowledges that participants from out of town may call the ethics office collect.

Please send one copy of your revisions to the Ethics Office for our records. Please highlight or underline any changes made when resubmitting.

The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

This letter serves as your Certificate of Approval, **effective as of the time that the requested modifications are received by the Ethics Office**. If you require a letter of unconditional approval, please so indicate on your reply, and one will be issued to you.

ONGOING REVIEW REQUIREMENTS

The term of this approval is five years. However, the approval must be renewed on an annual basis. In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://www.usask.ca/research/ethical.shtml* .

Dr. Valerie Thompson, Chair
Behavioural Research Ethics Board
University of Saskatchewan

Please send all correspondence to:

Ethics Office
University of Saskatchewan
Room 304 Kirk Hall, 117 Science Place
Saskatoon SK S7N 5C8
Telephone: (306) 966-2084 Fax: (306) 966-2069

APPENDIX B

Survey Invitation

Novenber, 2005

Dear Sir/Madam,

You are invited to participate in a study entitled The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students.

The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on comprehensive high school graduates.

Please complete the short questionnaire located at: http://edmund.usask.ca/phpsurveyor/index.php?sid=10. The questionnaire consists of 20 questions, and will take approximately five minutes to complete.

This research is conducted by Arnold Neufeld, Graduate Studies, Department of Curriculum Studies, University of Saskatchewan. In partial fulfillment of the requirements for the degree of Master of Education. Phone: (306) 244-2489. E-mail: avneufeld@sasktel.net

The participants chosen in this study were randomly selected from two comprehensive high schools. Your name was randomly selected from the alumni association records, obtained from your ten-year graduation organizers.

Your participation in this study will help to increase the awareness of the role that the Practical and Applied Arts serve to the students that have taken these courses.

I remind you that the confidentiality and anonymity of each of the participants and his or her respective school will be protected.

Further information about this study and contact information is located at the following URL. http://www.usask.ca/education/surveys/neufeld.pdf

Please feel free to forward this E-mail to fellow graduates (from 1992, 1993, 1994, 1995) if you are aware of their addresses.

Your participation is greatly appreciated.

Sincerely,

Arnold Neufeld

Information located at http://www.usask.ca/education/surveys/neufeld.pdf

November, 2005

Dear Sir/Madam,

You are invited to participate in a study entitled The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students.

Researcher: Arnold Neufeld, Graduate Studies, Department of Curriculum Studies, University of Saskatchewan. In partial fulfillment of the requirements for the degree of Master of Education. Phone: (306) 244-2489.

Purpose and Procedure:
The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on comprehensive high school graduates.

The participants chosen in this study were randomly selected from two comprehensive high schools. Your name was randomly selected from the alumni association records, obtained from your ten-year graduation organizers. Two hundred student names were collected for the sample.

Each of the graduates in the random sample received a survey package through Canada Post. The survey package includes this cover letter with instructions, which states that by completing the survey, respondents are giving their consent. The anonymous survey responses will be returned in the self-addressed envelope, or you may complete the web-based questionnaire.

You are asked to please complete the attached questionnaire, or go to the website http://edmund.usask.ca/phpsurveyor/index.php?sid=10 . The questionnaire consists of 20 questions, and will take approximately five minutes to complete. The results of the answers will be analyzed to identify trends.

Anticipated start date of the research study will be November 15, 2005 and the expected completion date of the study will be June 30, 2006.

Potential Risks: There is no risk of any sort to the participants in this study. If the Web-based method is selected for submitting the questionnaire the participant is responsible for any risks associated with transmitting information via E-mail. Due to the use of a public server anonymity and confidentiality cannot be assured.

Potential Benefits: Your participation in this study will help to increase the awareness of the role that the Practical and Applied Arts serve to the students that have taken these courses. These benefits are not necessarily guaranteed but it is expected that the results of this study will show the effect that the Practical and Applied Arts have on our students and society.

Storage of Data: All of the research data including original survey responses, and any supporting correspondence and documentation will be securely stored for a minimum of five years by the researcher's supervisor, Dr. Janet McVittie in the Department of Curriculum Studies, College of Education, at the University of Saskatchewan. During the study, the data will be stored in a locked cabinet in the researcher's home.

Confidentiality: The confidentiality and anonymity of each of the participants and his or her respective school will be protected. Confidentiality of all survey data will be assured. No names or other means of identification will be used in any printed or published reports. Anonymity will be ensured through the use of pseudonyms. Given the size of the population it would be impossible to identify an individual participant.

Although the data from this study will be published and presented at conferences, the data will be reported in aggregate form, so that it will not be possible to identify individuals. Please do not put your name or other identifying information on the envelope or questionnaire.

Right to Withdraw: Your participation is voluntary; if you do not want to participate in the study, please discard the questionnaire. In the questionnaire you may refuse to answer individual questions if you choose. For the accuracy of the study it is appreciated if you try to answer all of the questions as accurately as possible.

Questions: Information on the results of the research will be made available to the participants once the study has ended, upon request. The final thesis will be provided to the University of Saskatchewan, the Saskatoon Public School Division, and anyone who requests a copy. If you would like a copy please E-mail your request to: avneufeld@sasktel.net

Consent to Participate: Completing and mailing the completed questionnaire, or completing the web-based questionnaire, indicates your consent to participate in the study.

This research project was reviewed and approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on October 11, 2005 (BEH #05-242).

Thank you for your anticipated cooperation.
If you have any questions or comments please feel free to contact me.

Phone: (306) 244-2489
E-mail: avneufeld@sasktel.net

You may also contact the Ethics Office at (306) 966-2084, if you have any questions with regard to the study or your rights as a participant in the research study (participants out of town may call collect).

Sincerely,

Arnold Neufeld

APPENDIX C

Follow-up Letter

January, 2006

Dear Sir/Madam,

You should have received an invitation to participate in a study entitled “The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students”.

My goal was to receive 100 responses. I have currently received 72 responses. If you have completed the questionnaire I would like to thank you for your participation. If you have not had the time to complete the questionnaire I would encourage you to please do so.

The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on comprehensive high school graduates.

Your participation in this study will help to increase the awareness of the role that the Practical and Applied Arts serve to the students that have taken these courses.

Please complete the short anonymous questionnaire located at: http://edmund.usask.ca/phpsurveyor/index.php?sid=10. The questionnaire consists of 20 questions, and will take approximately five minutes to complete. Please feel free to complete the questionnaire at your earliest convenience.

I remind you that the confidentiality and anonymity of each of the participants and his or her respective school will be protected.

This research is conducted by Arnold Neufeld, Graduate Studies, Department of Curriculum Studies, University of Saskatchewan. In partial fulfillment of the requirements for the degree of Master of Education. Phone: (306) 244-2489. E-mail: avneufeld@sasktel.net

Further information about this study and contact information is located at the following URL. http://www.usask.ca/education/surveys/neufeld.pdf

Please feel free to forward this E-mail to fellow graduates (from 1992, 1993, 1994, 1995) if you are aware of their addresses.

Your participation is greatly appreciated.

Sincerely,

Arnold Neufeld

APPENDIX D

Data Collection Instrument:

Title:	**PAA Survey (ID 10)**
Survey URL:	http://edmund.usask.ca/phpsurveyor/index.php?sid=10
Description:	The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students.
Welcome:	Thank you for taking the time to complete this short questionnaire. By completing this questionnaire it is understood that you do so voluntarily and that you consent to the use of your responses in the study.
Administrator:	Arn (avneufeld@sasktel.net)

PAA Survey

The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students.

PART 1. Survey Questions

The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on randomly selected comprehensive high school students. The research will provide a profile of comprehensive high school students, for the period ten-years after graduation. The research will examine the reasons for students taking the courses, and the relationship between the courses and career and education choices.

Q1: What is your gender?

Please choose **only one** of the following:

- ☐ Female
- ☐ Male

Q2: What is your age?

Please choose **only one** of the following:

- ☐ <25
- ☐ 26
- ☐ 27
- ☐ 28
- ☐ 29
- ☐ 30>

Q3: What year did you graduate from high school?

Please choose **only one** of the following:

- 1992
- 1993
- 1994
- 1995

Q4: Which High school did you graduate from?

Please choose **only one** of the following:

- School B
- School A

Q5: Please indicate your overall grade twelve average.

Please choose **only one** of the following:

- <50%
- 50-60%
- 60-70%
- 70-80%
- 80-90%
- 90-100%

Q6: Current employment status?

Please choose **only one** of the following:

- Unemployed
- Self employed
- Employed
- Student

Q7: Listed below are the various courses that are currently offered in the area of Practical and Applied Arts. Please identify the courses that you took in high school?

Please choose **all** that apply

- Accounting
- Agricultural Studies
- Agricultural Technician
- Autobody
- Career and Work Exploration
- Clothing, Textiles, And Fashion

- [ ] Commercial Cooking
- [ ] Communication Production Technology
- [ ] Construction and Carpentry
- [ ] Cosmetology
- [ ] Design Studies
- [ ] Drafting and Computer-Aided Design
- [ ] Electrical and Electronics
- [ ] Energy and Mines
- [ ] Entrepreneurship
- [ ] Food Studies
- [ ] Forestry Studies
- [ ] Horticulture
- [ ] Housing
- [ ] Information Processing
- [ ] Interior Design
- [ ] Life Transitions
- [ ] Machining
- [ ] Mechanical and Automotive
- [ ] Photographics
- [ ] Photography
- [ ] Graphic Arts
- [ ] Theatre Arts
- [ ] Tourism
- [ ] Hospitality, and Entrepreneurship
- [ ] Upholstery
- [ ] Welding
- [ ] Wildlife Management

Q8: Were the marks in your Practical and Applied Arts courses higher than your regular subject marks?

Please choose **only one** of the following:

- [ ] Yes
- [ ] No
- [ ] Basically the same

Q9: Which of the following best describes your reason for taking these courses? Please explain.

Please choose all that apply and provide a comment

☐ Graduation requirement	
☐ Possible future employment	
☐ Personal reasons	
☐ For curiosity	

Q10: Would you recommend these courses to other students?

Please choose **only one** of the following:

☐ Yes

☐ No

☐ Unsure

Q11: Select the level(s) of education that you have achieved. Please specify.

Please choose all that apply and provide a comment

☐ High School	
☐ Journey status	
☐ SIAST or similar	
☐ College	
☐ University	
☐ Other	

Q12: After you graduated from high school did you go on to some form of post-secondary education or did you work?

Please choose all that apply and provide a comment

☐ Post-secondary education	
☐ Work	

Q13: Were you considered to be a student that struggled in regular school classses?

Please choose **only one** of the following:

☐ Yes

☐ No

Q14: Did you enjoy your Practical and Applied Arts courses more than your regular subjects?

Please choose **only one** of the following:

- ☐ Yes
- ☐ No
- ☐ Unsure

Q15: If you went to some type of post-secondary education indicate the years you were a student. Please specify. Year(s) after graduation:

Please choose all that apply and provide a comment

☐ Year 1	
☐ Year 2	
☐ Year 3	
☐ Year 4	
☐ Year 5	
☐ Year 6	
☐ Year 7	
☐ Year 8	
☐ Year 9	
☐ Year 10	

Q16: If you went to work directly after high school indicate the years that you have been in full time employment. Please specify. Year(s) after graduation:

Please choose all that apply and provide a comment

☐ Year 1	
☐ Year 2	
☐ Year 3	
☐ Year 4	
☐ Year 5	
☐ Year 6	
☐ Year 7	
☐ Year 8	

☐ Year 9

☐ Year 10

PART 2. Survey Questions

For the following questions please use the time period from completion of grade 12 to 5 years after high school graduation.

Q17: Is the employment or education that you have been involved with related to any of your Practical and Applied Arts courses that you took? Please specify.

Please choose all that apply and provide a comment

☐ Yes

☐ No

Q18: Did you work or take any further education in any areas of Practical and Applied Arts? Please specify.

Please choose all that apply and provide a comment

☐ Yes

☐ No

PART 3. Survey Questions

For the following questions please use the time period from 5 years to 10 years after high school graduation.

Q19: Is the employment or education that you have been involved with related to any of your Practical and Applied Arts courses that you took? Please specify.

Please choose all that apply and provide a comment

☐ Yes

☐ No

Q20: Did you work or take any further education in any areas of Practical and Applied Arts? Please specify.

Please choose all that apply and provide a comment

☐ Yes	
☐ No	

PART 4. Comments or Suggestions

Your participation in this survey is greatly appreciated. If you have any additional comments or suggestions you would like to make, to assist in the research, please include them in the space below. Remember that all your responses are confidential.

Please write your answer here:

Thank you for completing this survey.

APPENDIX E

Ethics Amendment and Approval for Interpretation Panel

Arnold Neufeld
713 McPherson Avenue
Saskatoon, Saskatchewan
S7N 0X9
Phone: (306) 244-2489 (home)
E-mail: avneufeld@sasktel.net

December, 2005

Dr. Valerie Thompson
Ethics Office
University of Saskatchewan
Room 304 Kirk Hall, 117 Science Place
Saskatoon, Saskatchewan
S7N 5C8
Phone: (306) 966-2084

Dear Dr. Valerie Thompson:

Thank you for taking the time to review my application to the Behavioural Research Ethics Board. My research "The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students" (BEH#05-242) was approved with minor modifications (11-Oct-2005).

To enhance my current survey data, which utilized a questionnaire, I would like to make an amendment which includes an interpretation panel including four participants.

I have included the following items, as outlined by the Behavioural Research Ethics Board:

- Interpretation Panel Consent Form
- Interpretation Panel Questions

Sincerely,

_____	_____
Arnold Neufeld	Dr. Janet McVittie
Student Researcher	Research Supervisor

University of Saskatchewan
Behavioural Research Ethics Board (Beh-REB)

15-Dec-2005

Certificate of Approval
Study Revisions

PRINCIPAL INVESTIGATOR	DEPARTMENT	BEH#
Janet McVittee	Curriculum Studies	05-242

STUDENT RESEARCHER(S)
Arnold Neufeld

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED (STUDY SITE)
University of Saskatchewan

SPONSOR
Unfunded

TITLE
The Influence of Practical and Applied Arts on Randomly Selected Comprehensive High School Students

ORIGINAL APPROVAL DATE	CURRENT RENEWAL DATE
25-Oct-2005	01-Oct-2006
CERTIFICATION UPDATE	APPROVED ON
13-Dec-2005	15-Dec-2005

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board has reviewed the proposed revisions to your study. The revisions were found to be acceptable on ethical grounds.

The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

The term of this approval is five years from the original approval date, but the approval must be renewed on an annual basis. In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://www.usask.ca/research/ethical.shtml* .

APPROVED.

Dr. Valerie Thompson, Chair
Behavioural Research Ethics Board
University of Saskatchewan

Please send all correspondence to:

Ethics Office
University of Saskatchewan
Room 304 Kirk Hall, 117 Science Place
Saskatoon SK S7N 5C8
Telephone: (306) 966-2084 Fax: (306) 966-2069

APPENDIX F

Interpretation Panel Consent Form

February, 2006

INTERPRETATION PANEL CONSENT FORM

Dear Sir/Madam,

You are invited to participate in a study entitled The Influence of the Practical and Applied Arts on Randomly Selected Comprehensive High School Students.

Researcher: Arnold Neufeld, Graduate Studies, Department of Curriculum Studies, University of Saskatchewan. In partial fulfillment of the requirements for the degree of Master of Education. Phone: (306) 244-2489. E-mail: avneufeld@sasktel.net

Purpose and Procedure:
The purpose of this study is to describe and explain the influence of the Practical and Applied Arts on comprehensive high school graduates.

The specific research questions are:

4) What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?
5) What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?
6) To what extent did the Practical and Applied Arts subjects influence students' future career choices?

The participants chosen for the Interpretation Panel of the study were purposefully selected from two comprehensive high schools. Eight participants were selected for the Interpretation Panel.

Each of the participants was contacted by phone inviting participation in the study. If an alumnus agreed to participate in the Interpretation Panel a mutually accepted meeting time and location was arranged. Completion of this consent form takes place at the time of the meeting.

The Interpretation Panel will take approximately two hours. Participants will be audio recorded with a microphone during the Interpretation Panel. All audio taped material will be transcribed.

Anticipated date of the Interpretation Panel would be in January of 2006 and the expected completion date of the study would be June 30, 2006.

Potential Risks: There are no known risks of any sort to the participants in this study. If a participant has any concerns they may be directed to the researcher or to the University of Saskatchewan Behavioural Research Ethics Board.

Potential Benefits: Your participation in this study will help to increase the awareness of the role that the Practical and Applied Arts serve to the students that have taken these courses. These benefits are not necessarily guaranteed but it is expected that the results of this study will show the effect that the Practical and Applied Arts have on our students and society.

Storage of Data: All of the research data including audio recorded data, and any supporting correspondence and documentation will be securely stored for a minimum of five years by the researcher's supervisor, Dr. Janet McVittie in the Department of Curriculum Studies, College of Education, at the University of Saskatchewan. During the study, the data will be stored in a locked cabinet in the researcher's home.

Confidentiality: The confidentiality and anonymity of each of the participants and his or her respective school will be protected. Confidentiality of all Interpretation Panel data will be assured. No names or other means of identification will be used in any printed or published reports. Anonymity will be ensured through the use of pseudonyms. Given the size of the population it would be impossible to identify an individual participant.

Although the data from this study will be published and presented at conferences, the data will be reported in aggregate form, so that it will not be possible to identify individuals.

Right to Withdraw: Your participation is voluntary, and you may withdraw from the study for any reason, at any time, without penalty of any sort and you may withdraw without loss of relevant entitlements. If you withdraw from the study at any time, any data that you have contributed will be destroyed at your request. Your participation in the Interpretation Panel process is voluntary.

Questions: Information on the results of the research will be made available to the participants once the study has ended, upon request. The final thesis will be provided to the University of Saskatchewan, the Saskatoon Public School Division, and anyone who requests a copy. If you would like a copy please E-mail your request to: avneufeld@sasktel.net

This research project was reviewed and approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on October 11, 2005 (BEH #05-242).

Consent to Participate: I have read and understood the description provided above; I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I consent to participate in the study described above, understanding that I may withdraw this consent at any time. A copy of this consent form has been given to me for my records.

You may also contact the Ethics Office at (306) 966-2084, if you have any questions with regard to the study or your rights as a participant in the research study (participants out of town may call collect).

_____ _____

(Name of Participant) (Date)

_____ _____

(Signature of Participant) (Signature of Researcher)

APPENDIX G

Interpretation Panel Questions

Interpretation Panel Questions

Turn the tape recorder on.

1) Given the data from the anonymous questionnaires:

   - What patterns do you see?
   - Would this confirm your experiences?

2) What is your perception of the Practical and Applied Arts (PAA)?

   - Do you think the PAA courses are of value to our students/society?

3) What do you view as the role of the Practical and Applied Arts courses in high school education?

4) In what ways do you think the Practical and Applied Arts influence our students' life long learning?

   - I define life long learning as the education that continues and is promoted throughout the life of an individual.
   - In what ways has (or could have) PAA influenced your life long learning?

5) What role do you think the Practical and Applied Arts play in our students' literacy for life?

   - I define literacy for life as the promotion of or improvement of our students' reading skills?
   - What role has (or could have) the PAA courses influenced your literacy for life?

6) Do you have any other comments or questions?

Thank you for taking the time to participate in this Interpretation Panel!

Once the study is complete a two page summary will be issued to each of the participants.

End of Interpretation
Turn off the tape recorder.

APPENDIX H

Question Relevance Tables

Table 19

Questions Relevance Table. Survey

Survey question	Research questions		
	1 What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?	2 What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?	3 To what extent did the Practical and Applied Arts subjects influence students' future career choices?
1	X		
2	X		
3	X		
4	X		
5	X		
6	X		
7	X		X
8	X		X
9	X		X
10	X		X
11	X	X	X
12	X	X	X
13	X		
14	X		X
15	X	X	X
16	X		X
17	X		X
18	X		X
19	X		X
20	X		X

Table 20

Questions Relevance Table. Interpretation Panel

Interpretation panel questions	Research questions		
	1 What is the profile of students who have taken Practical and Applied Arts courses in the comprehensive high schools?	2 What percentages of surveyed students who graduated 10 or more years ago from comprehensive high schools went on to university and/or SIAST or similar post secondary educational facilities?	3 To what extent did the Practical and Applied Arts subjects influence students' future career choices?
1) Given the data from the anonymous questionnaires: • What patterns do you see? • Would this confirm your experiences?	X	X	X
2) What is your perception of the Practical and Applied Arts (PAA)? • Do you think the PAA courses are of value to our students/society?	X	X	X
3) What do you view as the role of the Practical and Applied Arts courses in high school education?	X	X	X
4) In what ways do you think the Practical and Applied Arts influence our students' life long learning? • I define life long learning as the education that continues and is promoted throughout the life of an individual. • In what ways has (or could have) PAA influenced your life long learning?	X	X	X
5) What role do you think the Practical and Applied Arts play in our students' literacy for life? • I define literacy for life as the promotion of or improvement of our students' reading skills? • What role has (or could have) the PAA courses influenced your literacy for life?	X	X	X