PARTNERSHIPS IN EDUCATION:
SECONDARY/POST SECONDARY COLLABORATION

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Title: Partnerships in Education: Secondary / Post-Secondary Collaboration

Folio Paper #1: Partnerships between Secondary and Post-Secondary Institutions

Folio Paper #2: Learning Styles / Teaching Strategies: Bringing them together for Optimal Learning

Folio Paper #3: Developmental Stages / Teaching Techniques and the Learning Process

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AN INTRODUCTION TO THE PAPER FOLIO

Partnerships in Education: Secondary / Post-Secondary Collaboration

The education system in Newfoundland and Labrador has been victim to financial cutbacks for the past number of years (Banfield, Galway & Pope, 1997; Galway, Newman & Strong, 1998; Newfoundland and Labrador Federation of Students, 1997). In a society where technological advances are a constant factor, education must find a means to keep pace with less money. Two levels of the education system in particular, secondary and post-secondary, lack the money needed to keep pace with the technological advances being created due to the fact that the financial resources provided to them are only enough to keep the systems running (Galway et al., 1998). Currently, the business world requires its employees to be comfortable with "state of the art" information technology. The resources needed are often beyond the financial capabilities of the secondary system (Galway et al., 1998; Newfoundland and Labrador Federation of Students, 1997). Despite these difficulties, high school students need to be given the opportunity to use these innovative technologies.

Although students within the post-secondary system need to receive the same opportunities, however they too have been affected by budgetary restraints. These students are in a place where they are preparing for a specific position within the workforce. Technological skills, life-long learning, a teamwork approach and flexibility are all characteristics that a person entering a job should possess, whether it be teaching, hair designing or carpentry. As with the secondary school system, financial cutbacks make it difficult for these institutions to obtain the resources that are necessary to meet these objectives (Galway et al., 1998; Clarke, 1998).

Both the secondary and post-secondary institutions suggest a focus on preparing students

for their future role in society. Therefore, this research will explore a viable solution for high schools and colleges to begin a process of working together toward the same goals; preparing students for the world of work and to be life-long learners. This process of collaboration is not a simple one, but it could be financially and educationally a good choice. These two educational systems may share a variety of resources such as ideas, expertise, equipment, materials, and facilities.

Collaboration, articulation and more open communication between the different educational systems may help to relieve the anxieties of a student moving from the secondary system to the post-secondary system. For example, Burch-Clay (1999) notes that many students have problems moving from the comfort of their high school into the post-secondary system and that this transition may be eased. Also, Burch-Clay (1999) states that a program which brought together the two levels of education "provided a structured transition to the freedoms and responsibilities of college" for the secondary student (p. 35).

The first paper in this folio, Partnerships between Secondary and Post-Secondary Institutions, will highlight selected secondary / post-secondary partnerships within various educational systems in Canada and the United States. It will include the rationale for these partnerships, the types of partnerships which exist, the process of forming partnerships or articulation, disadvantages and advantages of partnerships, and suggestions for those interested in pursuing partnerships.

The second paper, Learning Styles / Teaching Strategies: Bringing them Together for Optimal Learning, will feature both the differences and similarities in learning styles of the secondary learner and the adult learner. The personalities, expectations, learning styles, and

abilities of these students present a wide spectrum of individual differences for the instructor and teacher. These differences must be taken into consideration when deciding to bring them together in a cooperative learning environment.

The final paper, Developmental Stages / Teaching Techniques and the Learning Process, will review the stages of development of the younger student, the adult learner and the older student. Emphasis will be placed on discussing the adult learner to demonstrate how they are different from their younger counterparts. Additionally, it will address issues which an instructor could contemplate and strategies which are available to aid in a valuable learning experience.

This paper will examine ideas which may be used to improve how the educational institutions, within Newfoundland, are currently administered. It will also reflect on collaborative efforts which have been used throughout North America noting those strategies which were unsuccessful. It will then indicate how these efforts may be approached differently giving suggestions which may bring about more positive results. The Newfoundland and Labrador educational system may build on the foundations of other collaborative ventures before implementing the practices.

Discovery Collegiate, with its connection to the Bonavista Campus of the College of the North Atlantic, has been termed the flagship for other educational institutions within the Newfoundland system (Moores, 1994). If other institutions are to benefit from the successes made at this particular joining, they must be made aware of the possibilities, not just from the United States or other parts of Canada, but here in Newfoundland as well. Many need to be made aware of what has happened, and continues to happen, in Bonavista and other partnerships within Newfoundland. The successes and also the failures of this collaborative effort must be evaluated.

Further recommendations may be made to help in this area of endless possibilities for our education system in Newfoundland.

Both the adult learner and the high school learner have needs, attributes and particular characteristics which make their learning styles different. Since both would be greatly affected by such partnerships, research in this area is needed and the knowledge gained could be used by teachers who find themselves working within all levels of education.

PARTNERSHIPS BETWEEN SECONDARY AND POST-SECONDARY INSTITUTIONS

Introduction

Growing numbers of businesses, agencies and community groups are embracing the philosophy of "Think education is expensive? Try ignorance" (Gregoire & Redmond, 1997, p. 14). It is recognized that an educated person leads to a productive employee, contributing taxpayer, responsible parent and a concerned citizen. Over the past decade, educational reforms have swept the educational system, from pre-school through to post-secondary (Bragg, 1994a; Williams, 1992). Common to these reforms is the belief that the education system needs to prepare students for "responsible citizenship, further learning, and productive employment" (Bragg, 1994a, p. 1). Few reformers seriously consider how school life can have meaning for the student and how to connect that to life outside of that school. Education reforms which have focussed on achievement of students in a high school are considered good. The degree to which secondary schools are successful with their students will dictate how successful a post-secondary school will be with many of the same students (Butte Community College, 1990). Recognizing that collaboration is needed, Mabry (1989) stated that, "there has been a surge in recent years in the number and variety of programs designed to provide a connection between the nation's secondary schools and all segments of higher education" (p. 48).

This paper will highlight the existence of secondary / post-secondary partnerships which are most predominate within various educational systems in Canada and the United States. It will include the rationale for these partnerships, the types of partnerships which exist, the process of articulation, disadvantages and advantages of partnerships, and suggestions for those interested in pursuing partnerships.

Background to the Issue

The education system in Newfoundland and Labrador has experienced financial cutbacks for the past number of years. Provincial expenditures on education have not parallelled government spending in other major sectors, such as social, resources and general government (Galway, Newman & Strong, 1998). In 1990/91 education spending, which comprised 24% of the provincial budget, decreased to 21% in 1997/98 (Galway et al., 1998, p.93; Clarke, 1998, p.65). In dollar amounts it moved from $820.4 million in 1993/94 to $681.4 million in 1997/98 (Galway et al., 1998, p.94). Spending priorities are shifting as the proportions in other sectors of government have increased, whereas education has decreased (Galway et al., 1998).

In a society where technological advances are a constant factor, education must discover a means to keep pace with less money. The business world requires its employees to be comfortable with "state of the art' information technology. Thus, the education system is expected to prepare its students with this level of efficiency. The resources needed are often beyond the financial abilities of the school system. Nevertheless, high school students must be given the opportunity to use these innovative technologies (Galway et al., 1998).

Post-secondary students need to receive the same opportunities, in spite of the fact that they have also been affected by budgetary restraints. Since 1991, the overall amount of funding from the provincial government has decreased by over $28 million, from approximately $200 million to $172 million (Newfoundland and Labrador Federation of Students, 1997, p. 6 & 37). Post-secondary education is facing serious challenges with the large decreases and the need for highly trained workers (Galway et al., 1998). Due to these financial reductions, students are not being adequately prepared for a specific position within the workforce. According to

Postsecondary Indicators '98 (Galway et al., 1998), the Provincial budget has decreased each year as transfer payments from the federal government decreases. Despite this fact, "the need for postsecondary education has become even more pressing in the face of high unemployment levels, high levels of dependency on social support and the need for highly trained workers in emerging industrial developments" (Galway et al., 1998, p. 94). Galway, Newman and Strong (1998) continue by stating that "although this Province's financial resources are limited, providing postsecondary educational opportunities is an essential component to any strategy to increase the likelihood of eventual employment for young people" (p. 94). Technological skills, life-long learning, a teamwork approach and flexibility are all characteristics that a person entering a job, whether it be teaching, hair designing or carpentry, should possess. Again, financial cutbacks have made it difficult for these institutions to obtain the resources that may be necessary to meet these objectives.

With the realization that it may be a number of years before there are changes to the current financial problems, other solutions should be considered. If we reviewed the high school curriculum and the post-secondary curriculum we would notice that they are closely related; both educational institutions have tried to prepare their students for their future role as productive citizens.

Collaborative partnerships may be a viable alternative for these institutions to begin a process of working together towards the same goal - preparing students to be life-long learners. Collaboration is a process of working together. Although not a simple procedure it may be financially and educationally a good choice. These two educational systems may share ideas, expertise, equipment, resources , materials, or facilities. In his report of the provincial

government's Royal Commission on Education, Williams (1992) briefly mentioned links between secondary and post-secondary education. He found that links between high school and post-secondary education "have been growing in recent years" and, as a result, there has been an increase in post-secondary activity (Williams, 1992, p. 41). Even though this report has reshaped education in Newfoundland, the ideas of collaborative efforts were not stressed. It is a recommendation which could have been emphasized with the education system currently undergoing major structural changes. Partnerships should be an aspect of this process.

The relationship between these two levels of education is often strained which "goes back two centuries or more, but the closer collaboration required for successful partnerships is a relatively recent phenomenon" (Greenberg, 1992, p. 1). The differences in high school and college courses, disparities in funding, resources, student bodies, instructors, academic freedoms, salaries, vacations, teacher qualifications, and leadership style are only some of the factors which contribute to the misunderstanding, distrust and fear of working together (Greenberg, 1992).

Why have Partnerships?

When reading literature describing high school - college/university partnerships, sources state reasons why such partnerships are necessary (Adams, Boutet, Connelly, Poglitsh, & Summers, 1994; Gregoire & Redmond, 1997; Taber, 1996; Rees, 1996a, b, & c; Mabry, 1989). Concerns about student drop-out rates, decline in interest, and the need for a skilled labor force are identified by the Council of Regents *Vision 2000: Quality and Opportunity* (1990). This document has been used to guide the development of college systems and partnerships between secondary and post-secondary systems. It asserted strongly that, to improve the education situation, "priority attention needs to be given to strengthening the interface between the

secondary and college systems at both the local and the provincial levels to increase student success rates and to meet the province's need for skilled graduates" (Vision 2000 Steering Committee, 1990, p. 1). Alberta Advanced Education, in its document *Trends and Issues in Post-Secondary Education, 1989 to the year 2000: Discussion paper*, expressed concerns related to the institutions ability to keep pace with technological advances while maintaining good quality programs, instructors and facilities all in a time when government grants have been reduced (Alberta Advanced Education, 1989, p. 21). This discussion paper explained trends and issues for post-secondary education within the province of Alberta. Taber (1996) examined the idea that "collaborations and partnerships between organizations can enlarge their resource bases" (p.73). As a result, many of the educational organizations have explored the possibilities of partnerships between secondary and post-secondary institutions.

Greenberg (1992) hinted that the relationship between high schools and post-secondary institutions is often strained. For years, secondary teachers have been complaining about the programs available to their students upon completion of high school, while post-secondary institutions implied that the secondary student was becoming less and less prepared to handle further education. Therefore, rather than criticising each other, it would appear that one solution would be to work together. "The coordination of high school and community college programs so that students can progress from one level to the next without wasting time, effort, or expense requires cooperation, ongoing negotiations and often written articulation agreements" (Mabry, 1989, p. 50). Both levels of education could provide personnel to develop courses and a curriculum to be used in either of the institutions. This curriculum may begin within the high school and continue into the college. Teachers may share materials, lesson plans and both

institutions could benefit by the pooling of expertise (Pregot, 1987, p. 124).

The Alliance for Community College Innovation published *Preparing a Twenty-First Century Work Force: Innovations in Programs and Practices;* in discussing partnerships between school and college, they expressed the necessity of bridging the gap between high school and college. The Alliance briefly outlined programs which could be developed to help prepare students for the work force. Some programs discussed by the Alliance were;

- Tech-Prep Prefreshman English Course,
- Integrating High School English and Applied Communications,
- School-to-Work Continuum Model K-16,
- School-to-Work Opportunities,
- Summer Workforce Preparation Program for High School Students,
- Tech-Prep Associate Degree Bridge Program,
- CD-ROM Technology as a Post-secondary Program Guide (Scott, 1997, p. 1-4).

The Northland Pioneer College/Mogollon High School experiment, in Heber, Arizona, was based on a belief of sharing resources. Northland Pioneer College was conceived as a decentralized college with a number of small campus sites in rural areas. The resource centre services were not directly provided by the college campus, but rather by the Mogollon High School. The resource centre was owned by the high school and used by the college staff and students. Services were provided by personnel of both institutions. It was neither feasible nor practical for both institutions to have a fully functioning resource centre in the tiny, rural area. Therefore, one resource centre was developed for the use of both the high school and college staff and students (Rothlisberg, 1991, p. 2).

"Declining community college enrollments, low test scores and high dropout rates in secondary schools, and a workforce that lacks necessary skills for burgeoning high tech industries" have lead to the need for collaboration between secondary and post-secondary schools (Mabry, 1989, p. 48). A study was conducted explaining the high school / college partnership at Discovery Collegiate, Bonavista, Newfoundland (Moores, 1994). The Bonavista Campus of Eastern College, now a part of the College of the North Atlantic system, was physically connected to Discovery Collegiate, the local high school, and both institutions shared physical space, resources, and personnel. Moores (1994) stated that there is the potential to "add meaning to the high school curriculum, facilitate the process of career choice and career training, enhance employability skills and establish the basis for life-long learning" (p. 32) within this partnership.

The Thomas Haney Centre in Maple Ridge, British Columbia was a modern facility which combined the Maple Ridge Campus of Douglas College and Maple Ridge High School of School District No. 43 (Coquitlam). This facility opened in 1992 and has been noted as the "first" of its kind in Canada; a state-of-the-art facility with classrooms, computer labs, gymnasium, shops for technical trades, library and teaching cafeteria. As with the partnership in Bonavista, these institutions shared many of their facilities, equipment and are housed under the one roof.

Each of these institutions are working together to provide better services and education for their clientele. These secondary / post-secondary partnerships have been in existence for a number of years throughout Canada and the United States and have been collaborating on educational opportunities suitable for life-long learning. Although all problems are not solved through these connections, there is evidence of a growing recognition of the benefits and advantages for all involved (Mabry, 1989). The results of these efforts will be "better informed,

better prepared, and better qualified high school and college students" (Patten & Dennison, 1987).

According to researchers, discussed throughout this paper, cooperative efforts between secondary and post-secondary institutions are not new. However, within recent years there has been a revival of programs and collaborative efforts to strengthen and enlarge these connections (Mabry, 1989, p. 48). Different options, such as the sharing of resources, tech prep, and joint enrollment, have been developed by various institutions throughout Canada, but more frequently they have been developed within the United States. The Newfoundland education system may find some of these options quite viable and may choose to develop an example of cooperation. A brief description of some of the approaches taken throughout the United States and Canada will be explained in this section of the paper.

Ways of Sharing - Partnerships

Tech Prep

One of the most well-known examples of secondary / post-secondary collaboration is the Tech Prep programs. Tech Prep, traced to the late 1960s as an effort to reform vocational education, is a undertaking that sees the high school student enter into a career oriented program of study which motivates the student to pursue his or her career goals. "A fundamental underpinning of Tech Prep is the linkage of school-based knowledge to the broader context of family, work , and civic life" (Bragg, 1994a, p. 1).

Bragg (1994a) discussed five emerging Tech Prep models:

- Pre-Tech Prep begins as early as middle/junior high school. Students are given career awareness and exploration for four years of high school, then two years of

post-secondary education.

- The Adult Tech Prep model "is designed to meet the needs of the large and growing population of adult students enrolled in two-year colleges who have not had adequate secondary preparation".
- Combining both career academics and occupational clusters/career paths is the theory behind an integrated Tech Prep program. Students complete more than vocational courses, but bring together "occupations requiring different levels of educational preparation, ranging from high school to advanced graduate study".
- The workplace is deliberately used in work-based Tech Prep. This program is formal, structured and organized by instructors and employers. Often, mentors and coaches are used, wages given, and formal assessment and skill certification are evaluated.
- The final model of Tech Prep is the Tech Prep Baccalaureate Degree (TPBD). "A key focus of TPBD is an inverted curriculum design based on an integrated curriculum involving hands-on technical courses and related academics at the technical college level, and more abstract theoretical courses and other general education requirements at the university level".

Bragg (1994b), in *Building a Preferred Future*, stated that Tech Prep can help reform the educational system. The author also expressed six core concepts of a Tech Prep program to ensure success: grounding in the core curriculum; linkage between secondary and post-secondary education beginning at kindergarten; connection of work-based learning to school-based learning; a focus on outcomes and increased student performances; accessibility for all students; and a

network of people (Bragg, 1994b, p. 102).

Tech Prep programs have been successful in a number of locations. For example, by the late 1980s, Tech Prep programs were reporting successes in Richmond County, North Carolina; Warwick, Rhode Island; Portland, Oregon; and Pendleton, South Carolina (Bragg, 1994a). According to Moores (1994), the Tech Prep "approach to making the high school curriculum more relevant to student needs is now being legislated in many states in the United States after following the successful initiatives of particular colleges and schools" (p. 21). The North Carolina system is now committed to expanding the program to all public schools and colleges, and the Richmond County system has expanded the program to ensure a smooth transition from high school to a post-secondary school (Moores, 1994).

Joint Enrollment

Closely resembling Tech Prep is the idea of Joint Enrollment. Mabry (1989) referred to joint or dual enrollment as the most common form of collaboration. This is an agreement which allows students to concurrently enroll in high school and college courses; a challenge which high schools may not be able to offer alone. High school students who are academically gifted or have free time in their schedule may choose this option of completing college-level credit. The partnerships support high schools who may not have the expertise needed to offer college courses, therefore the college will offer these courses on the high school campus.

Mabry (1989) discussed DeKalb Community College which has a 16 year history of joint enrollment with local high schools. DeKalb offered general courses, taught by college instructors, to college-bound students. This program boasted of reaching the top 20 percent of a graduating class. A second major benefit from this situation was "improved communication with the high

schools concerning curriculum matters" (Mabry, 1989, p. 49).

Advanced Placement

Very similar to joint enrollment is advanced placement. In this arrangement high school students are given the opportunity to gain college or university credits while still attending high school. "Generally, advanced placement is available to those with high grade-point averages or high scores" (Mabry, 1989, p. 49). Students at Discovery Collegiate in Bonavista, Newfoundland, begin this line of study in Grade 9. During the grade 9 year, students complete some course work from Grade 10 (normally math, sciences and English). During grade 10 they complete grade 11 work and during grade 11 they complete grade 12 work. Upon reaching Grade 12, students have already completed Level III courses, and may have space in their schedule to complete university courses such as calculus, and chemistry. The students "study the subject in greater depth, write a standardized achievement test, and earn a university credit while still in high school" (Moores, 1994, p. 19).

Mabry (1989) discussed several advanced placement situations in the United States. The Minnesota Post-Secondary Enrollment Options was an advanced placement program which was, "developed on a statewide basis to provide high school students with a wider variety of educational options, and enables students to enroll full or part time in academically more rigorous programs at eligible postsecondary institutions" (Mabry, 1989, p. 49). Two other situations mentioned by Mabry (1989) were the Big Bend Community College in Washington which offered automotive advanced placement program and the Linn-Benton Community College which offered college credit courses at six local high schools (Mabry, 1989).

Sharing Equipment/Resources/Materials/Supplies

One way to reduce the spending of funds is to share resources, equipment, materials and supplies. Educational institutions are often generous in sharing gymnasium and audio-visual equipment (Rees, 1996a, b, & c; Butte Community College, 1990; Mabry, 1989; Moores, 1994; Patten & Dennison, 1987; Pregot, 1987). Rees (1996c) found that 77% of sharing between levels of educational institutions involved materials and supplies such as "general supplies, books, audio-visual equipment, sports equipment, computer software, technical equipment, art supplies and music equipment" (Rees, 1996c, p. 8-10). The main two school facilities shared were the gymnasium and the library (Rees, 1996b). Rees (1996c) further explained that the institutions involved in a joint effort accumulated savings of up to $200,000 when sharing resources and equipment, however other costs involved in moving equipment or travel cost would reduce the actual net savings.

Pregot (1987) depicted the partnership between Gardner High School and Mount Waschusett Community College, United States. The athletic department, library, audio-visual department and theatre from each institution had no problems sharing equipment with each other. The institutions shared equipment, gymnastic equipment, microfiche readers, or theatrical props, and, when repairs are needed, they pool their talents (Pregot, 1987).

Patten and Dennison (1987) reiterated the other researchers' words. They expanded the notion to include the "joint purchase or use of equipment and facilities, inter-institutional contracts for instruction, or the operation of high schools on college campuses"(p. 5). They cited different locations of this type of cooperation which occurred successfully:

- seven Maricopa Community Colleges in Arizona were involved in over 100 articulation

projects with local high schools, focussing on shared resources and facilities;

- Land Lake Community College in Illinois was involved in the joint purchase and use of 150 computers for the college and 15 high schools;
- Alamo Community College District and the San Antonio College established a high-tech high school on their college campus, where students are enrolled in courses such as science, math and computer courses.

Moores (1994) stated that sharing facilities to "enhance regular programming has the potential of assisting high school students to connect academic skills and knowledge with real projects" (p. 28). For example, a group of high school students may visit a college lab for a demonstration which is unavailable at the high school.

Resource Centres

The Learning Resource Centre, or library, has become an integral part of many educational institutions. A cooperation can exist between two or more institutions where the materials housed in the resource centres may be shared.

Northland Pioneer College and Mogollon High School, in Arizona, signed an agreement to cooperatively use the library in the high school. Collections of materials, inter-library loans, and articles are faxed into the library for use by both levels of education. "The high school collection helps the college students, and the college collection of materials helps the high school students" (Rothlisberg, 1991, p. 4). Faculty from both schools are pleased because the sharing of a resource centre allows for many more materials and efforts have been made to ensure success of this cooperation agreement. Rothlisberg (1991) stressed that "they want to work together. They want quality services for their library clienteles, and they are working hard to achieve this goal"

(p. 3).

Rees (1996a, b, & c) completed a study on sharing of resources within the 170 school boards in Ontario. He found that within these districts two facilities most often shared were the library and the gymnasium (Rees, 1996a). Rees (1996b) noted that, "twinned schools have access to additional resources, personnel, fiscal, material, and equipment, in a time of constraint and cutbacks" (p. 14).

Career Days

Career days are important to both the high school student and the college student. It is a day which is dedicated for professionals, industry personnel, businesses, and post-secondary institutions to meet with students. This often involves displays, presentations, discussions, and/or demonstrations. McCauslin (1993) found that students were given the opportunity to explore career interest and aptitudes.

This is expanded at Chesapeake College in Maryland and Fox Valley Technical Institute in Wisconsin, by the "sponsoring of contests, fairs, and expositions for high school students" (Mabry, 1989, p. 51). Mabry (1989) noted that this gives the colleges the opportunity to establish relationships between themselves and the high schools and to better equip the student with the knowledge of courses and services available to them at such institutions.

Butte Community College invited junior and senior high students to meet with representatives of business, industry, colleges and universities. Tours were conducted and student events offered. "Faculty and staff are available to confer with and answer any questions secondary students might have" (Butte Community College, 1990, p. 20). The college also made available its facilities for career fairs hosted by the local high schools. Both institutions were

given the occasion to develop career awareness within the students to correspond with their own objectives.

Sharing Faculty / Teaching Exchanges

Moores (1994) described shared teaching resources as "an arrangement whereby students go to a nearby college for classes, or college faculty may go to the high school to teach a class" (p. 18). This exchange may occur in a number of options. Firstly, when a small high school with low enrollment in some classes, is unable to employ the qualified personnel to instruct certain classes, "secondary schools in many states contract with a local community college to teach certain classes for them" (Long, Warmbrod, Faddis & Lerner, 1986, p. 55). A second option would be for a high school to invite an instructor from the college to be a guest lecturer for a unit of work, rather then teaching the entire course. A third option would exist when a local high school teacher instructs a class at the college as a guest lecturer or an evening class instructor (Moores, 1994, p. 18).

The sharing of faculty can highlight a number of opportunities for both institutions. When schools share, a knowledgeable, skilled and resourceful range of human resources, the "facility increases the potential for program enrichment through the sharing of professional knowledge and expertise" (Moores, 1994, p. 12). It was important for the high school teachers to understand the program requirements of courses offered at a post-secondary school. Also, college staff benefit from a knowledge of high school students' academic background before beginning their program.

In Sacramento, California, the Los Rios Community College District and the Sacramento Unified School District upgraded the secondary teachers with a knowledge of the college by using the high school teachers as part-time staff (Long et al., 1986). A second example of joint faculty

existed in six of the seven Maricopa Community Colleges in Arizona where they are involved in over 100 projects with local high schools, "focussing in many cases on resource coordination, joint use of facilities, and shared instructors" (Van Patten & Dennison, 1987, p. 3).

Shared Counsellor Partnership

The shared counsellor program involved the employment of a counsellor who would be a link between the high schools and the post-secondary schools. This counsellor was responsible for improving student career decision-making through coordination between the secondary and post-secondary schools. The counsellor advises students with post-secondary information, helps with finances, and may assess them in understanding their academic potential. When the student attends the post-secondary institution, the counsellor continues to help with enrollment and advice (Stanfield, 1995).

A cooperative arrangement between North Harris College and Aldine Independent School District has led to the development of a shared counsellor partnership tool kit, designed to help others start a similar program. The counsellor from the college travelled throughout the school district to help students explore career goals and options. Students may also learn of the college credits which may be gained while still in high school. The program expressed six goals and objectives for this program to: improve student career decision-making; identify past practices of information on career gathering; help with the delivery of services for all students of special populations; recommend strategies to improve the process; describe the essential components for coordination between this counsellor and the in-house counsellor; and develop a "tool kit" for other such partnerships (Stanfield, 1995).

After three years, Stanfield (1995) described the shared counsellor program as a "vital

component to guide the college into the twenty-first century" (p. 4). North Harris College and the high schools involved in the agreement recognize that many students have benefited from the program by becoming more aware of what is available to them.

Mentorship

Mentorship programs are used in a wide variety of frameworks. The business-world use this approach to train new recruits as do schools in the pairing of new teachers with experienced teachers (McCauslin, 1993). It involved the partnering of new personnel into a situation with someone who is experienced in the position.

Within college - high school articulation, students from secondary schools are matched with a mentor in post-secondary school. If a career or program is of interest to high school students they may choose to learn more about it from a college student. They are paired with a post-secondary student currently in that program for an informational visit, job-shadowing or as a person to answer the high school student's questions (McCauslin, 1993).

Western Michigan University, Kalamazoo Valley Community College, Kalamazoo College and the Kalamazoo Valley Intermediate School District formed the Kalamazoo Valley Partners for Quality in the United States. The partnership led to mentorships between the different educational levels. McCauslin (1993) noted that the "lesson learned is that strength amasses through cooperation" (p. 1). Stronger ties existed between the schools.

Tutorial Help

Tutorial help is quite similar to mentorship, however in a tutorial situation, each individual student is given specific help regarding his or her particular concerns. The facilitator may help a high school student with academic work, career decisions or discuss any trouble a student may be

encountering (Pregot, 1987).

College students offered their services to the high school students at Gardner High School in Massachusetts. With the help of staff from Mount Wachusett Community College, the school received a grant which allowed for a full-time tutor "to remediate student academic work, discuss possible careers, and counsel troubled students in nutrition and physical conditioning" (Pregot, 1987, p. 123). It also allowed students from the college an opportunity to tutor high school students who needed the extra help. Pregot (1987) notes that this program has been extremely valuable and successful, "they have enjoyed an excellent working relationship and shared mutually beneficial services" (p. 123).

Extra-curricular Activities

Extra-curricular activities occur outside of the regular school day and program of studies. They may include such things as sports, clubs (chess, computer, photography) or some type of support group. In some occasions, a high school student and a post-secondary student may share common interests and benefit from working together in their endeavours. Clubs could include instructors and students from both institutions - computer clubs, photography or environmental clubs. Additionally, instructors and students from a post-secondary school could help in coaching school sports teams, or facilitate secondary students in exploring interests, skills, and occupations which exist.

Pregot (1987) noted that studies have shown secondary and post-secondary partnerships could be positive if they include extra-curricular activities. One such success was found in Mount Wachusett Community College in Massachusetts where local high school students are used as actors, singers, and stage decorators in the drama department. These schools also exchanged

stage props and music. The art department at the college had several students who voluntarily instructed art in the elementary and high school. Finally, an art show displayed the work of students from both levels of education (Pregot, 1987).

The Process of Articulation and Cooperation

The descriptions of possible partnerships between secondary and post-secondary institutions, discussed in this paper, is not exhaustive. There are as many different options as institutions. However, when secondary and post-secondary schools decide to cooperate, problems may arise because change is not often an easy process. These two institutions have historically worked in isolation of each other. Each will probably choose to remain in complete control of their own domain, without giving over power to the other. Therefore, cooperation to this extent will not develop overnight nor will it be without major obstacles. Literature is replete with information and suggestions to help with the process.

> According to the Commonwealth of Virginia (1988), "articulation is a planned process within an educational system that coordinates instructional programs in such a way that students can move from one instructional level to another, or from one institution to another, without unnecessary duplication or gaps in the Instructional process" (p. 7).

Successful articulation could benefit the educational institutions. The Community benefits when equipment, staff and facilities are used by everyone and students will not have to repeat previously learned skills. High schools and post-secondary institutions are able to ease the transition of the students (McCauslin, 1993). Despite the benefits, articulation is not easy. It takes the commitment and cooperation of all of the stakeholders - administrators, teachers, faculty, students and the community. "Articulation agreements are a product of the understanding

and trust that develops when faculty and administrators know each other and share curriculum and goals" (Maricopa Community College, 1986, p. 1).

The Ontario Ministry of Education, in its document *The Blueprint for School-College Linkage*, addressed that depending on local circumstances factors may contribute to or inhibit the process of articulation. Adams and others (1994) explained that the following are needed to ensure success; commitment from leadership, goals clearly stated, opportunities for all to benefit, ongoing communication, and putting all agreements in writing. Adams (1994) further noted that the process may best occur if divided into three phases.

Phase I involved planning for articulation. This phase was a time of exploration, setting conditions, developing a framework and discussions between the administrative levels of both institutions. Within this phase, a steering committee should be established to identify needs to be addressed, determine receptivity to the concept, discuss ideas with peers, develop an institutional agreement - names, terms, statement of intent, responsibilities of each party, areas of co-operation and a commitment - and the commitment of senior administrators (Adams et al., 1994, p. 4).

Phase II was the implementation stage. This phase included the "development of detailed plans and procedures, the preparation and signing of specific program articulation agreements and the day-to-day work of curriculum review, planning, information planning and so on" (Adams et al., 1994, p. 4). Individuals were appointed to co-ordinate activities, secondary and post-secondary instructors met to discuss programs, course outlines were exchanged, gaps and overlaps were reviewed and teaching methodologies were shared. Agreements were signed to continue the process into the final stage (Adams et al., 1994, p. 5).

Monitoring and evaluation was included in phase III. This phase is very important in the

process and must be ongoing. It included the "collection, analysis and interpretation of data to assess effectiveness, identify necessary revisions, identify other potential areas for agreements, and update terms of agreements" (Adams et al., 1994, p. 5). This committee could consist of members from the secondary and post-secondary schools and from outside the institutions.

Vision 2000: Quality and Opportunity, a document by the Ontario Ministry of Colleges and Universities, recommended that Ministers of Education and colleges and universities should establish a "Provincial School / Colleges Co-ordinating Council" with members from all stakeholders (Vision 2000 Steering Committee, 1990, p. 89). This Council would be provincial, fostering initiatives at the local level. According to the Steering Committee, it could provide a forum for facilitating collaboration, publishing articulation agreements, providing a framework, and developing strategies to encourage articulation (Vision 2000 Steering Committee, 1990, p. 89).

Moores (1994) stated that a vision of partnership was important and should be developed by all stakeholders - school boards, schools, district offices of colleges and universities, administrators, faculty members, students, local business and community members. Dialogue and awareness are also necessary components for this vision (Moores, 1994, p.29).

According to Metcalf-Turner (1994), research and inquiry is needed before entering the articulation process. Examination of funding arrangements, observation of the possible impact of specific indicators, a survey of the faculty to determine their perceptions of the process, and an investigation of how the local contexts affect the process are all issues to be addressed (Metcalf-Turner, 1994).

Myers (1995) also addressed the problems which may arise when building and sustaining a

collaborative arrangement. Four inhibiting factors were expressed.

> They could have an erroneous understanding of the effort and not participate or be an obstructionist based on that misunderstanding; they may decide to participate only to find out things are not as they thought; they could mis-assess the extent and pervasiveness of the effort; they could misunderstand their own role in the effort (Myers, 1995, p. 6).

Myers (1995) concluded by explaining that change is a process which will take time. This time should be used to consider a number of elements to help the change to become a success. Teacher educators and administrators must be included at every stage. The process - how to do it - must be emphasised. Monitors can be used to help the process, especially at critical points. The specific objectives first outlined must not be the only goals; they may change throughout the process. Finally, time, personnel, energy, and accommodation for problems must be provided for within the process (Myers, 1995).

Disadvantages of the Cooperative Effort

Although articulation and cooperation appears to be a feasible answer, disadvantages must not be overlooked when institutions are making decisions regarding their possibilities. One major disadvantage of sharing is that not everyone may share the same vision. The high school may have completely different expectations of the arrangement from the university or college. Rees (1996a) identified other disadvantages of sharing. Although money is expected to be saved from the cooperation, there is increased cost of the transporting of students, equipment and staff between schools. Salaries may increase if specialized staff must be hired to offer some of the programs. Much time is necessary to develop and implement collaborative activities - many

meetings for those involved. Finally, the literature warned that an "unfavourable political climate might prevail if schools are forced" into this type of partnership (Rees, 1996a, p. 7).

Moguel (1997) explained how other problems arise because the day-to-day work of secondary and post-secondary institutions differ. "While university professors teach some classes, their chief work is research and publication. While other school faculty take college course work and may dabble in research and publication, their chief work is to teach students"(Moguel, 1997, p. 6). Also, the secondary school (10 month program) calendar often operates differently than the post-secondary school (three semester program) which can also cause problems.

According to Rees (1996b), the teachers at the "twinned schools" in Ontario expressed several disadvantages from the partnership. Firstly, teachers and administrators felt that they had extra responsibilities and a greater work load due to the partnership. Secondly, the fiscal savings were not as great as expected from new cost incurred. Thirdly, Rees (1996c) found some of the same disadvantages as discussed in other literature; increased workload, many meetings, increased need for communication, increased cost of transportation and increased salaries.

The time factor was often considered a problem in a collaborating process since schools are very busy places. Johnson, Hughes and Mincks (1994) recounted that instructors and teachers stated that "all of our schedules are full" (p. 435), therefore finding time to meet is challenging. Within both institutions, the schedules of all involved are full and only brief sharing could be done. "Unless sufficient resources can be freed to provide opportunities to support the extended conversation needed to create a shared agenda and unless there is a greater commitment to stabilizing participation, separatist partnership patterns will not only persist but predominate" (Bullough & Kauchak, 1997, p. 231).

Although there were issues which may cause problems, "a growing body of collaborative experience demonstrates that these factors can be overcome with appropriate planning and sensitivity to divergent, as well as congruent, institutional goals and culture" (Greenberg, 1992, p. 1).

Advantages of the Cooperative Effort

Even though there are some initial drawbacks to partnerships, the benefits and advantages discussed in the literature outweigh the negatives. Collaboration allowed for educational, economic, social and political benefits (Rees, 1996a). Educational advantages were seen through the enhancement and better quality of student programs. Also, with specialized programs a better calibre of instructors were often hired. Economic benefits arose due to the reduction of duplication - whether in supplies, materials, equipment, facilities, resources or personnel. The social and political advantages arose from the interactions of the stakeholders within the partnerships (Rees, 1996b).

Other positive outcomes found in the literature include keeping small schools open and an improved quality of programs (Rees, 1996c). Greater cooperation also brought about the development of complementary curricula, the development of innovative ways to instruct, development of better human resources and the sharing of information (Vision 2000 Steering Committee, 1990).

Improving inter-institutional communication allowed secondary students to become aware of college life and time to learn about schools they might choose to attend. Colleges also provided student-parent meetings, mentoring programs, college campus visits, career-oriented guest speakers, college admissions representatives and prepared tours for secondary students

(Gregoire & Redmond, 1997).

Adams et al (1990), established that students, institutions and society as a whole, all benefit from improved linkages. Students may be more motivated when they see a clear goal, gain an increased access to college programs, are ensured a greater preparation for post-secondary education and a greater earnings potential. Institutions may develop improved programs, have greater opportunities for staff development, plan long-range goals and facilitate greater recruitment. Society develops the potential of the full human, gains an increase in the efficiency and effectiveness of educational systems, and realizes more productive individuals in society (Adams et al., 1990).

Johnson, Hughes and Mincks (1994) discussed the benefits they encountered from a school - university partnership. The following benefits were noted: teachers appreciated the opportunity to be heard by an education professor; they were looking at old ideas in new ways; they noted sharing helped them to answer their questions; and university professors were able to reinforce the talking about teaching with actual teaching. Both stated that "collaboration helps clear my vision and sharing suggestions and experiences, whether successful or not, is an avenue for growth" (Johnson et al., 1994, p. 434).

Suggestions / Recommendations for Success

The Ministry of Education in Ontario stated that the local climate contributes to the success or failure of a partnership. They noted that certain conditions which may help the process were: the existence of commitment and leadership; clearly stated goals and intentions; opportunities for all parties; ongoing constant communication; starting small; having realistic expectations and putting agreements in writing (Adams et al., 1994, p. 3). Along with these

recommendations, "what is required, at all levels, is time, patience, and attention to important details in contexts of genuine concern for all involved" (Clarke, Davis, Rhodes & Baker, 1998, p. 599).

Mabry (1989) also expressed eleven characteristics of success partnerships:

- leadership and commitment from top administrators,
- involvement of all faculty from the very beginning stages,
- recognition, time and compensation for work,
- a trusting relationship,
- everyone must perceive the advantages,
- formal and written agreements,
- clear understanding between all members,
- open and frequent communication,
- competency-based curricula,
- a recognition of shared educational goals and initial efforts should be on programs that are ensured of success

Rees (1996a, b, & c), in the three studies of the "twinned schools" in Ontario, gave a number of suggestions as well.

- The partnership should begin with a common purpose and the belief that advantages will be gained by all involved,
- allow time to establish trust,
- have a common agenda,
- allow time to develop and to implement the ideas,

- create a simple structure,
- provide leadership,
- provide financial support for restructuring,
- equal credit and success should go to all partners,
- frequent meetings, especially at the beginning,

Whitford (1996), another proponent of partnerships, discussed the lessons learned through the Excellence in Education Program. He explained that when developing a school-college partnership a number of principles should be considered. They were:

- All key stakeholders, including staff, educators, parents and community members, must be included in the early project plans, development and the decision-making process.
- The collaboration should understand the needs of the institutions and the goals must be based on these needs, ideas and strengths.
- Provide the opportunity for the members of the secondary and postsecondary institutions to learn about each other's system.
- The plan developed must include both short and long-term goals with adequate support to implement.
- Ensure that leaders from the institutions are completely in support of the project and have signed on to help.
- Encourage collaboration, group planning, discussion of problems and continuance, by using a team approach with members from both systems.

- Open doors must exist, allowing for the sharing of expertise and for everyone to be aware of happenings.
- Allow teachers to have major leadership roles at all stages of the collaboration process and training in order to secure support.
- An open line of communication with regular feedback is necessary to share information of the project with all partners.
- A forum with community committee members or scheduled events will reach out to all stakeholders.
- As with all undertakings, an evaluation will help with continued success. This evaluation must be continuous and inclusive, helps all partners understand and improve the collaborative process and enable the participants to engage and learn form the evaluation - meaning it is done with and not to the participants. (Whitford, 1996).

Ensuring that all staff of a partnership were aware of the happenings is important. Faculty should become familiar with each other via social events, program and facility tours, meetings, workshops and staff development. High school teachers need to understand the college and university programs. This could occur with joint professional development (Moores, 1994).

Vision 2000: Quality and Opportunity, stated that "activities for joint professional development have been undertaken successfully and could be expanded" (Vision 2000 Steering Committee, 1990, p. 88). In Ontario, the teachers association invited college instructors to attend a variety of workshops. This fostered information sharing between the institutions.

Virginia has been involved in articulation for a number of years. The Commonwealth of

Virginia Vocational and Adult Education stated four points for staff development within a partnership situation. They were;

- meetings should include personnel from secondary and post-secondary institutions;
- in-services should be provided to update technical skills;
- a joint seminar on economic development should be included;
- other workshops should allow for teams to review curriculum and other information (Commonwealth of Virginia, 1988).

A combination of the above recommendations could lead to the successful articulation process. All stakeholders involved in the procedure should be completely aware of the happenings from the very beginning to ensure their support throughout the entire collaboration. Bromfield (1999) noted an important observation, regarding the climate for collaboration, in order for these partnerships to have a future, "there must be a spirit of collaboration and cooperation, and a positive, trusting, respectful attitude of institutions toward each other" (p. 4).

Conclusion

> Secondary-postsecondary program articulation has been around for decades, but today it is entering a strong new developmental cycle, driven by a renewed sense of service to students and community, the demand for educational excellence, the spread of new technology into most technical occupations, and the need to get the most out of shrinking finances at a time of declining enrollments (Long et al., 1986, p. 67).

It may be a possibility for high schools and post-secondary institutions to participate in

collaboration. However, in the process of providing "more" to the schools and in turn the student, a number of issues could arise. First of all, it must not be forgotten who the process is to benefit, the student. The students in both institutions will be greatly affected by these types of changes in their schools. How will the junior high student feel about going into a college cafeteria, sitting down next to college students and eating their lunch? Or, if they are at their resource centre and a college student approaches them to ask to sit next to them while they are doing research? The needs of the college learner and the needs of the junior/high school student must be taken into consideration.

Secondly, when students, at an early age, are asked to make decisions regarding future career, is it a valid and informed choice? How many know, in junior or senior high, their future goals? Therefore, be careful not to force students to make decisions to early in life?

Thirdly, students who go through programs, such as the Tech Prep programs are heading for colleges and universities. These post-secondary institutions may not be ready for them. "Contextual learning is the academic foundation of more than 1,100 Tech Prep programs throughout the country" (Hull & Sounders, 1996, p. 15). Post-secondary institutions have not taught this type of learner before. Therefore, they must change their styles of teaching to one of relating learning to life experiences, transferring knowledge into the knowledge students already know, applying the knowledge, experiencing learning through exploration and discovery and cooperative learning (Hull & Sounders, 1996). Is the post-secondary education system prepared for this type of learner?

Finally, no project of this magnitude can be successful without financial help and commitment to begin and implement the program. Where will this help come from within the

current time of fiscal restraint?

Senge (1990) discussed the idea of the change process and people's inability to conceptualize the new because it is based on their ideas of the present. When an educational change is involved, such as collaboration between secondary and post-secondary institutions, any decisions made are based on their present understanding of what should be. Therefore, they are often limited from the start. For change to occur there must be an allowance of time for the process itself and an allowance for unseen possibilities which may occur.

Even though there are obstacles to overcome, the education system in Newfoundland has faced restructuring. Partnerships could be a very viable and successful change. One such partnership program "has exceeded expectations and demonstrated that, working together, students, parents, corporations, school districts, and universities can make a substantial impact on the graduation and college enrollment rates" (Gregoire & Redmond, 1997, p. 19). Literature shows that "no level of education is an island any longer" - working together can bring about very positive results. Those of developing life-long learners for our society.

In this paper I have discussed the collaborative efforts of secondary and post-secondary institutions. The personalities, expectations, learning styles, and abilities of the student introduces a wide spectrum of individual differences for the instructor and teacher. These differences should be taken into consideration when decisions are being made to bring them together in a cooperative learning environment.

LEARNING STYLES / TEACHING STRATEGIES: BRINGING THEM TOGETHER FOR OPTIMAL LEARNING

Introduction

Through various research studies, the deviations among the developmental stages and learning styles of the adult and high school students have been observed. Both the adult learner and the high school learner have needs, attributes and particular characteristics which make their learning styles distinct. Since both would be affected by partnerships between educational institutions, research in this area is needed and the knowledge gained could be used by teachers who find themselves working with both levels of education.

The different learning styles of the secondary learner and the adult learner will be explored in this paper. Similarities among students of all levels will also be examined. A literature review and Internet searches will be used to inquire how the students learn and the varying learning styles.

Successful Learning

Definition of Learning

A definition of learning should be established when discussing learning styles. David Kolb (1993) defined learning as "the process whereby knowledge is created through the transformation of experience" (p. 155). His definition accentuated four important aspects of learning. First, the process of learning, rather than the content, is critical. Second, knowledge is continuously being created and is not just acquired. Third, experience is transformed through learning in objective and subjective forms. Finally, to understand learning one must also understand knowledge (Kolb, 1993, p. 155). Jerold Apps (1991) defines learning as the "accumulation of information, change

in behavior, improved performance or proficiency, change in knowledge, attitudes, and skills, a new sense of meaning, cognitive restructuring and personal transformation" (p. 34).

The change explained, in the above definitions of learning, could occur more proficiently with a knowledge of learning style. Teachers could help learners to understand their strengths through the discovery of their particular learning style and to value their individual preferences. Students who "are encouraged to reflect upon their own thinking learn to recognize and refine their own abilities" (Butler, 1986, p. 3). Therefore, when considering learning styles, a variety of opportunities should be presented to encourage not only academic growth, but personal, interpersonal, intellectual and creative growth as well (Butler, 1986).

Acknowledging Learning Styles

According to Butler (1986), acknowledging learning styles "requires the caring direction and guidance of teachers who can appreciate – not just tolerate – differences, and who will intentionally address a broad range of diversity in mental gifts, learning preferences, and personal expression" (p. 3). Butler (1986) noted that the role of the teacher is very important in the use of style. "By intentionally, but carefully, expanding our own teaching style, instructional strategies, and attitude toward diversity we can invite success for students" (Butler, 1986, p. 6). The teacher should examine his or her own style and analyze how it influences his or her teaching. This reflection could aid in the understanding of style and how it encourages or discourages learning. Then, the teacher may then be more astute to the students being taught and advocate each learner's individual strengths. (Butler, 1986).

Gary Conti (1985) supported statements that we must provide outlets and opportunities for all students to use their strengths and their own learning styles. He investigated the

relationship of teaching styles of the educator matching the learning styles of the student. This research suggested that there is indeed a relationship between the two variables - teaching style and student achievement. The report concluded with Conti urging "teachers to examine more closely all the variables in a specific situation before selecting a management style" and to "expand their investigation of the role of cognitive style in the adult classroom" (Conti, 1985, p. 227).

Function of the Brain in Learning

Neuroscientists Knowledge

After gaining knowledge of learning styles, it is helpful to have a basic knowledge of how the brain functions and influences an individual's learning style. An educators' goal is to assimilate the knowledge of cognitive researchers and neuroscientists who study how the brain perceives, processes, stores and retrieves information. The facts acquired should be the basis of working with varying learning styles or preferences. Traditional styles of teaching and learning were developed when there was a narrow base of knowledge regarding the brain and its processes (Kussrow, 1997).

Kussrow (1997) explained it is now known that only 30% of the general population were auditory learners, while 40% were visual learners, 15% were tactile learners, and 15% were kinesthetic learners. Traditionally, the education system had been teaching to only 30% of the general population. He also stated a number of other findings available about the human brain. The findings were;

- human intelligence is not fixed;
- the brain has billions of neural cells which can create trillions of interconnections;

- it is a mechanism which needs meaningfulness;
- it is multi-dimensional and does not like fixed progressions;
- it can process at great speeds and gets bored when it has little to do;
- the physical structure of the brain can change as a result of new experiences and stress brings the capacity of the brain down (Kussrow, 1997).

When the manners of the brain are not recognized it will become bored. Educators should realize that the brain needs meaningful information that is linked with real-life situations. "By ignoring the personal world of the learner, educators actually inhibit the effective functioning of the brain" (Kussrow, 1997, p. 11). With such awareness, of the brain the need to understand how an individual student processes information and learns, is important. "Nothing is more unequal than treating individuals as if they were equal in all ways" (Kussrow, 1997, p. 7). An instructor should treat students as individuals.

Brain Theory

According to Chris Ward and Jim Craigen (1997), further developments of the brain have been put forth through the Brain Theory developed and promoted by Patricia Wolfe. Chris Ward and Jim Craigen (1997) discussed the importance of understanding how the brain works and the implications of it for your students (Ward & Craigen, 1997). When an educator understands how students learn, they may also discover how to can increase their understanding and their use of information (Ward & Craigen, 1997). When new information is received and is made meaningful, through using interesting attention getters, linking it to previous experiences, or bringing it to real-life situations, more neurotransmitters are produced within the brain. These, in turn, create synapses or networks of neurons and are strengthened with each new message. It is then possible

to help a brain grow and capture more information or learning (Ward & Craigen, 1997). Consequently, educators have realized that "better learning will come not so much from finding better ways for the teacher to instruct, but from giving the learner better opportunities to construct" (Ward & Craigen, 1997, p. 15). Students can construct when they are given the occasion to learn within their comfort zone of learning. Every brain is different because of different experiences. Due to this, educators should not expect all students to learn in the same manner. Students must be treated as individuals with differing learning styles.

What is a Learning Style?

Since the mid-1970's, educators and researchers have noted the importance of learning styles (Titus, Bergandi, & Shryock, 1990, p. 165). For example, W.C. Fields is reported to have said, "Style is everything!" However, "Style clearly isn't "everything," but research in learning styles offers us a powerful tool to help students achieve to the fullest extent of their potential" (Tendy & Geiser, 1997, p. 13).

Hanson (1995) states that "by learning about the learning style preferences of students, teachers can design curriculum, instruction and evaluation that takes advantage of students' style strengths in helping them to achieve their learning goals." (p. 6). According to Hanson (1997) learning style is not a teaching method but an approach to instruction that recognized the talents and strengths of each individual learner.

Butler (1986) stated learning style has the following.

> Style, our unique way of showing others our strengths, limitations, preferences, and biases, reveals our minds in process and our individuality. By recognizing, appreciating and respecting the stylistic strengths in our students, we enhance self-

> esteem and positive self-concept, validate differences as gifts and show the value of diversity (Butler, 1986, p. 2).

Another researcher, Jerold Apps (1991), defined learning style has "the individual's characteristic ways of processing information, feeling, and behaving in learning situations" (p. 40). Learning style preferences encompassed a wide variety of actions: listening, visual materials, starting broad and working to specifics, learning alone or in groups, and so forth.

DeBello, "tells us, learning style is the way people absorb, process, and retain information" (Kussrow, 1997, p. 9). He further asserted that learning style is biological which cannot be changed any more than we can change eye color, skin or signature. Since it is difficult to change, educators should recognize the individual differences of students. Griggs, in 1983, noted that "some students work in creative spurts, some require a high degree of structure while others thrive on minimal structure; some prefer to learn independently while others are motivated to learn through peer group interaction" (p. 4). Teachers should diagnose learning styles and initiate an environment that allows for the various learning styles to be successful. Griggs (1983) asserted that "matching teachers' teaching style to students' learning styles results in improved student achievement and attitudes" (p. 8).

A long time researcher of learning styles is Rita Dunn. Michael Shaughnessy (1998) interviewed Dunn, posing the question, What are learning styles? According to Dunn, "a person's learning style is the way that he or she concentrates on, processes, internalizes, and remembers new and difficult academic information or skills. Styles often vary with age, achievement level, culture, global versus analytic processing preference, and gender" (p. 141).

A closer examination of learning styles history would help to understand how it affects a

students learning. The next section of this paper will take a more in-depth look at learning styles.

A History of Learning Styles

The importance of the individuality of learning styles is not a new concept. In recent history, researchers have been interested in why some students succeed in a particular teaching environment, while others do not. As early as 1927, Carl Jung proposed that there were major differences in the way people perceived, the way they made decisions, and how they used active or reflective styles while interacting. However, it was the late 1960s before educators began to spend time studying learning styles, developing learning style inventories and encouraging educators to search for learning styles within their students (Tendy & Geiser, 1997).

Between 1967 and 1972, Kenneth and Rita Dunn developed a learning style model which dealt with five strands: environmental, emotional, sociological, physical and psychological. They believed that a person learned through multi-sensory approaches (Tendy & Geiser, 1997). Rita and Kenneth Dunn have been strong proponents of the belief that individuals have specific learning styles. In *Practical Approaches to Individualizing Instruction: Contracts and Other Effective Teaching Strategies (1972)*, the Dunns stated that the "individualization of instruction should progress to the degree that all prescribed learning will be based on each youngster's abilities, interests, style of learning, rate of learning and achievement" (p. 242). The researchers emphasized the importance of using "the individual strengths of the staff as well as those of the students" (Dunn & Dunn, 1975, p. 310).

For a while, it was believed by researchers, such as Ramirez, that learning styles were related to cultural determinants (Ramirez, 1974). To support his theories, Ramirez developed a series of seven teaching manuals. Together these manuals were referred to as New Approaches to

Bilingual, Bicultural Education: Developing Cognitive Flexibility, which addressed the implications of culture on a child's potential (Ramirez, 1974). Support of Ramirez research was still evident in 1996 when Dunn and Griggs found in their research that there was a great diversity of learning styles within a culture.

Joseph Hill, in 1967, defined learning styles as a way an individual explore for meaning. Hill (1967) explained that humans learned by trusting senses, feelings and experience in their "quest for knowledge and truth" (p. 3). "Development of appropriate methods of inquiry for the social, behavioral, and educational sciences has been a difficult task because of the multivariate nature of problems extant in the respective disciplines" (Hill, 1967, p. 3). However, Hill's inventory was considered complex and did not achieve reliability or validity (Tendy & Geiser, 1997).

In 1976, Harry Reinert stated that learning styles were reactions to auditory stimuli. His learning exercise revealed that material learned by students was enhanced when it was presented in a students perceptual strength. This meant that a student could learn better when new information was presented to them in the way in which they felt they learned the best. Reinert saw these strengths as visualization, written words, sounds and/or activity (Tendy & Geiser, 1997).

In 1978, David Kolb, a cognitive theorist, developed a learning style inventory which consists of four styles: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Tendy & Geiser, 1997). Kolb (1993) expanded his theory to describe that a person can have a variety of combinations of the four learning styles. At one end of the continuum was active experimentation with reflective observation at the other end. On the other

coordinate, concrete experience was at one end and abstract conceptualization is at the other end.

In 1977, Isabel Myers and Katherine Briggs created the Myers-Briggs Type Indicator. *True to Type: Answers to the Most Commonly Asked Questions About Interpreting The Myers-Briggs Type Indicator*, answers a number of questions regarding this indicator. Jeffries (1991) stated that the Myers-Briggs Type Indicator (MBTI) "is a carefully validated, highly reliable personality inventory that allows individuals to declare the degree to which they express preferences for eight aspects of human personality" (p. 81). The Myers-Briggs Type Indicator articulated that our preferences for our learning style are shaped by both nature and nurture. Preferences are inherited, but are developed by many factors such as friends, family, religion, and jobs (Jeffries, 1991). Tendy and Geiser applied Jung's work and researched to try and understand the differences in human learning (1997).

In 1979, Bernice McCarthy developed the 4MAT System. Inherent in the 4MAT system are two major premises: "1) people have major learning styles and hemispheric (right-left mode) processing preferences, and 2) designing and using multiple instructional strategies in a systematic frame to teach to these preferences can improve teaching and learning" (McCarthy, 1991, p. 1). It included research from learning styles, right and left brain dominance, creativity, effective management, art, and movement/dance. Learners were placed into four categories. Type one learner perceived information concretely and processed it reflectively - the imaginative learner. Type two learner perceived information abstractly and processed it reflectively - the analytic learner. Type three learner perceived information abstractly and processed it actively - the common sense learner. Type four learner perceives information concretely and processes it actively - the dynamic learner. McCarthy's plan was for a lesson to be developed which

incorporated all four learners, therefore each student would be in their field at least 25% of the time (Tendy & Geiser, 1997). McCarthy stated that "teachers do not need to label learners according to their style, they need to help them work for balance and wholeness" (McCarthy, 1997, p. 50).

In 1980, Charles Letteri placed learners in one of three categories. Type 1 is an analytic learner who sees details sharply. This allows the learner to function well within a traditional school setting. Type 3 learners are global processors and categorize things broadly. This broad generalization causes a type 3 learner to have problems in a traditional school setting. Type 2 learners are those who demonstrate a little of both types 1 and 3 enabling them to achieve moderately in a traditional school. Letteri believed that a type 3 learner must be changed in order to succeed (Tendy & Geiser, 1997).

Griggs (1983) additionally promoted the different elements or stimuli that "affects a person's ability to perceive, interact with, and respond to the learning environment" (p. 7). The author described the elements of Dunn and Dunn as: environmental stimulus (light, sound, temperature, design); emotional stimulus (structure, persistence, motivation, responsibility), sociological stimulus (pairs, peers, adults, self, group, varied); physical stimulus (perceptual strengths, mobility, intake, time of day) and psychological stimulus (global/analytic, impulsive/reflective, cerebral dominance) (Griggs, 1983).

In 1987, David Hunt worked with children in the social services agency. While working with these children he devised the Paragraph Completion Method for identifying the conceptual levels of these individuals. His structure had three levels; children who were concrete and impulsive, children who were dependent upon rules and authority and those who were

independent and needed alternatives. (Tendy & Geiser, 1997). "Your common sense ideas and your unexpressed theories, growing out of your own personal experience, provide enormously rich sources of knowledge about human affairs" (Hunt, 1987, p. 1). Hunt stated that you should begin with yourself when searching out style (1987).

Schmeck (1988) saw style as a developmental process, moving from global to analytic with individuals often integrating both styles. He believed that using both styles is a type of self-actualization and can see and understand at a deeper level. Schmeck (1988) in *Individual Differences and Learning Strategies*, emphasized three levels of learning, "deep processing (involving a conceptualizing strategy), elaborative processing (involving a personalizing strategy) and shallow processing (involving a memorizing strategy)" (p. 187). In 1991, Schmeck, Geisler-Bernstein and Cercy, revised the Inventory of Learning Process. The researchers noted that further study was needed in this area, he also noted however that "it seems clear that an individual's personality is inextricably linked with that person's learning style" (p. 360). Schemeck informed educators that versatility should be taught to students regarding the development of both learning styles and the use of either when it is necessary (Tendy & Geiser, 1997).

According to Silver, Strong and Perini (1997), most learning-style theorists felt that there were 4 basic styles of learners. The Mastery style learner who absorbs information concretely, step-by-step. The Understanding style learner who focuses on ideas and learns through questioning, reasoning and logic. The Self-expressive style learner who uses feelings and emotions to construct new ideas. The Interpersonal style learner who prefers to learn socially and judge learning in terms of the potential in helping others. Most of these learning style advocates would

agree that, "all individuals develop and practice a mixture of styles as they live and learn" (Silver, et.al., 1997, p. 23). Educators should help students discover their styles and to create a balance of all styles.

Teachers may ultimately contemplate the differences among the individuals. "Learning styles, with their emphasis on differences in individual thought and feeling, are the tools we need to describe and teach to these differences" (Silver, et.al., 1997, p. 24).

Searching for the "Right" Learning Style

As noted from the previous section, researchers have given their definition of learning styles and recommendations on how to place students in categories. However, there have been only a few theories on learning styles which have prevailed and appear to be more valuable to educators. The next section will take a look at the more predominant learning styles theories.

Dunn and Dunn Inventory

As mentioned earlier, Kenneth and Rita Dunn postulated that individuals learn through a variety of senses. There were 5 strands of elements that affect learning such as environmental, emotional, sociological, physiological and psychological. Knowing the elements for which a person has a strong preference can contribute to valuable information as to "how, when, where, and under what conditions they learn best, as well as how to match their learning needs and preferences with instructors" (Kussrow, 1997, p. 9). The learning style inventory, developed by Dunn and Dunn, had one of the highest reliability and validity ratings because it identified and dealt with a number of elements and directly related it to the classroom and teaching (Tendy & Geiser, 1997). The Dunns "advocate approaching all learners through multisensory approaches, but initially through their most preferred modality and then providing reinforcement through their

secondary or tertiary modality" (Kussrow, 1997, p. 7).

Myers-Briggs Type Indicator

Isabel Myers Briggs and her mother, Katharine Briggs, developed the Myers-Briggs Type Indicator using Carl Jung's theory of psychological type, with an added fourth dimension. The four dimensions identified are extroversion-introversion, sensing-intuition, thinking-feeling, and judging-perceiving (Tendy & Geiser, 1997).

Learning to Learn with Style based its model of learning on the MBTI because they felt "it was the most widely validated learning styles instrument and it is appropriate for adults" (Hanson, 1997, p. 5). The authors also felt that it offered a wide variety of information which was valuable for understanding their own learning as adults. Furthermore, what was gained through this indicator was applicable outside of educational experiences. "Learning about type can help adult learners to understand their preferences, their behaviours, and how they process information and make decisions" (Hanson, 1997, p. 6). As it can help them understand other aspects of their lives as well as their education, this is very important for adult learners.

Kolb Learning Style Inventory

David Kolb, in 1978, developed a learning style inventory based on four learning preferences: concrete, reflective, abstract and active. The concrete experience style focused on experiences and dealing with human situations in a personal way. They use feelings and relate well to others. The reflective observation stylist looked at different perspectives and appreciate other points of view. They watch, observe and understand different situations. The abstract conceptualization style used logic, ideas and thinking rather than feeling. They use a scientific approach to solving problems. The active experimentation was a style which is active in doing

rather than observing or reflecting. They actively changed situations and use practical applications (Tendy & Geiser, 1997). Kolb revised his theory into a grid with active experimentation and reflective observation along one coordinate, and concrete experience and abstract conceptualization along the other coordinate. Therefore, a person could have a combination of abilities and fall between two of the extremes of styles, those being, the accommodator (feeling and doing), assimilator (thinking and watching), converger (thinking and doing) or diverger (feeling and watching) (Tendy & Geiser, 1997). Kolb continued to use this inventory with when describing adult learning styles. In *The Process of Experimental Learning*, Kolb expressed that "learners, if they are to be effective, need four different kinds of abilities - concrete experience abilities (CE), reflective observation abilities (RO), abstract conceptualization abilities (AC) and active experimentation abilities (AE)" (Kolb, 1993, p. 148).

Titus et al. (1990) administered a study which used the Kolb Learning Style Inventory because of its "prevalence in the literature and because it yields scores on four aspects of learning: abstraction, concreteness, reflection, and activity." (p. 165). The study was designed to answer two questions: What are the characteristics of learning styles of high school adolescents? and how do these styles differ from those of adults? The results of the study suggested that "adolescent high school students differ from adults to some degree in their learning style" (Titus et al., 1990, p. 169). The following findings were also noted by Titus and others (1990) regarding learning styles: adolescents are not as abstract in their learning as adults, adolescents tend to lean more toward concrete learning than adults and that at the transition point in the life cycle (from adolescent to adult) the learning style of a person may change.

Model of Style Differentiated Instruction

Kathleen Butler (1986) promoted the use of the Model of Style Differentiated Instruction (SDI). It was developed through research on styles, higher order thinking, and critical and creative thinking and provides guidelines for different approaches to be used in the classroom. It suggested how to help the different style needs of the individual learner on a daily basis by providing a model for teachers to organize and develop assorted strategies to use in the classroom (Butler, 1986). In doing so, Butler believed, a teacher is sending a clear message that differences are acceptable.

Butler (1986) based her model on four learning styles by students. The concrete-sequential learner was one who focuses on being organized, factual, efficient, task-oriented and detailed. The abstract-random learner was one who focus's on being imaginative, emotional, interpretative, holistic and flexible. The abstract-sequential learner was one who is intellectual, analytical, theoretical, critical and convergent. Finally, the concrete-random learner was one who is divergent, experimental, inventive, independent and a risk-taker.

Multiple Intelligence Theory

A theory which moved away from the idea of an individual having only one learning style is the multiple intelligence theory. This theory stated that each individual has a multiple of intelligences. However, a person may have one dominant intelligence, or combination of a variety of intelligences. This could be different for each individual (Craigen, 1997).

Theories described in the previous section of this paper showed an almost developmental stage of learning. Meaning that they believed there was only one best way to learn and individuals should strive to develop that particular style of learning. In other words, a best style for learning.

Multiple Intelligence does not see one particular style of learning as being better, but a variety of styles are good for a person to develop.

Howard Gardner in Frames of Mind: the Theory of Multiple Intelligences, (1985) introduced to the world of human intelligence the idea of multiple intelligence. Gardner referred to intelligence as "the human ability to solve problems or to make something that is valued in one or more cultures" (Checkley, 1997, p. 8).

Gardner's theory includes eight intelligences;

- Verbal-Linguistic (Word Smart) is the capability to use language(s) to express oneself and to understand other people. A person for whom language is important thinks in words, is highly developed auditory skills, tells stories or jokes with ease, or writes well would be a verbal-linguistic person.
- Logical-Mathematical (Logic Smart) is evident in a person who understands the way a scientist does things or can manipulate numbers, quantities and operations. They have strong mathematical skills, can think abstractly, tend to be systematic, are skilled in reasoning, logic and problem solving, explore patterns, and have logical rationales for their thoughts and actions.
- Visual-Spatial (Picture-Smart) is characterized by the ability to represent the spatial world in your mind. This person would think in images, have clear pictures of representations of objects, shapes and patterns, know locations.
- Musical-Rhythmic (Music Smart) is characterized by the ability to think in music. They hear patterns and are able to manipulate them, think in sounds, rhythms, and patterns, sing, hum or whistle to themselves, work better with background music,

mimic sounds easily, performs and appreciates music and are often sensitive to environmental sounds.

- Bodily-Kinesthetic (Movement Smart) is the capacity to use the whole body or parts of your body to find solutions to problems, or make something. They have a keen sense of body awareness, excellent fine-motor coordination, and can mimic qualities and mannerisms.
- Interpersonal (People Smart) is characterized by having the ability to understand people. They have the skill to work with other people, think by relating, cooperating and communicating with others, have a strong sense of empathy, can help to mediate conflict, have many friends, like working in groups, and are good organizers.
- Intrapersonal (Self Smart) is characterized by the understanding of oneself, who you are, what you can and cannot do, how you react to things and what things to avoid. They tend to know what to do in situations, where to go to get help and often do not go wrong. They like to work alone, are inwardly motivated, stay away from teamwork, need private space and are strong-willed and self-confident.
- Naturalist (Environment Smart) is characterized by the ability to discriminate among living things and other features of the natural world. They enjoy plants, animals and rocks, hear and see links in nature and like to spend time outdoors. (Checkley, 1997; Coady & Warr, 1997)

The standard view of intelligence was that you were born with a certain amount of it, you could change it and there were tests to determine how much of it you do have. There were

serious implications to this notion. Educators often treated everyone as if they had one of the eight intelligences explored by Gardner. Catering to only one of the eight intelligences meant that many profiles were overlooked. The theory of Multiple Intelligence challenged that view. Kussrow (1997) described this theory, "the fact is that all humans, irrespective of age, gender, or culture have seven or eight identifiable intelligence, or proclivities, for learning" (p. 10). It proposed that "all human beings have eight intelligences but what makes life interesting, however, is that we don't have the same strength in each intelligence area and we don't have the same amalgam of intellegences" (Checkley, 1997, p. 9). The notion that humans have more than one intelligence challenged the traditional theories and beliefs of intelligence and learning styles. The theory of multiple intelligences were supported by many studies in child development, cognitive skills, psychometrics, and within different cultures. The model is based on much research in physiology, anthropology, personal and cultural history (Silver et al., 1997). According to Latham (1997), Gardner admitted himself that he is "as surprised as anyone by the education community's intense interest in his theory of multiple intelligence" (p. 84). Educators have embraced this theory perhaps because it states what many educators have known for many years, that students have different abilities for learning and in learning in different areas.

The purpose for using the multiple intelligence theory was simple, "A school is responsible for helping all students discover and develop their talents and strengths. In doing this, the school not only awakens children's joy in learning but also fuels the persistence and effort necessary for mastering skills and information for being inventive" (Campbell, 1997, p.14-15).

According to Campbell (1997), Gardner maintained that each person has a unique cognitive profile and that there is no single model of Multiple Intelligence to use. Many teachers

and schools have made it a part of their mission statements and curriculum (p.15).

Greenhawk (1997) expressed six reasons why the multiple intelligence theory is needed:

- The new standardized tests require students to solve difficult, real-life problems by applying basic skills.
- Students need to understand their abilities and the abilities of others.
- With the theory of Multiple Intelligences, instructors believed that it taught students how to use their strengths to learn and how to work on their weaknesses.
- They build their confidence to take educational risks.
- As a result they are provided unforgettable learning experiences using as many of the eight intelligence as possible.
- The Multiple Intelligence theory also helped educators to more accurately assess students' mastery of basic skills and higher-level content.

Greenhawk (1997) discussed the results of the use of Multiple Intelligence theory. Most importantly, was that "the overall achievement and confidence of the students have risen substantially" (p. 62). Tests that are utilized today require that students apply skills to solve difficult, real-life problems. Greenhawk (1997) set out to research Multiple Intelligence theory and its effect on standardized assessments in *Multiple Intelligence Meet Standards*. The research exhibited that the theory should be used for a number of reasons, to help students understand their abilities and the abilities of others, use their strengths to learn and work on weaknesses, build their confidence, provide unforgettable learning experiences and accurately assess students mastery of basic skills and higher-level content. When evaluating Multiple Intelligence at a Maryland elementary school, Greenhawk (1997) confirmed the following results: children understood their

strong intelligence, students retained more knowledge, students understood more complex and higher-level concepts, students enjoyed doing research, students became more self-directed and seemed more confident in trying out new skills, students discovered new abilities, students internalized high standards and showed an overall improvement across the board. "In sum, a new school culture was created - one that values excellence, diversity and achievement" (Greenhawk, 1997, p. 64).

Using the Intelligences

According to Gardner, we can strengthen our intelligence, although some people will improve in one area more readily than others, "either because biology gave them a better brain for that intelligence or because their culture gave them a better teacher" (Checkley, 1997, p. 10). Teachers or instructors should help students use the intelligence to be successful in school. Gardner argued against the notion that there is only one way to learn how to read, or to learn about biology. It is not common sense to believe that everything should be taught in all eight intelligence either. However, the point is that many topics can be taught in a variety of ways. (Checkley, 1997, p. 10). "There are things that people need to know, and educators have to be extraordinarily imaginative and persistent in helping students understand things better" (Checkley, 1997, p. 10). Teachers or instructors should think more in terms of the strengths of their colleagues and put teams of teachers together with varying strengths of intelligence to have a unit complementing each group of learners. The individual differences should be taken into consideration. "The bottom line is a deep interest in children and how their minds are different from one another, and in helping them use their minds well (Checkley, 1997, p. 11).

According to Latham (1997), Gardner urged users of this theory to keep three tenets in

mind: 1. "Cultivate skills that are valued in the community and society 2. approach new concepts and subjects in a variety of ways 3. personalize instruction as much as possible".

Multiple Intelligence provided a framework for enhancing instruction. "It gives teachers a complex mental model from which to construct curriculum and improve themselves as educators" (Campbell, 1997, p. 19). "School matters, but only insofar as it yields something that can be used once students leave school" (Checkley, 1997, p. 12).

It is difficult to teach using every teaching method or by using every form of assessment. The following means may be used to integrate some of the ideas. First, keep a record of styles and intelligence you use, those that work and offer choices. Secondly, use one intelligence at a time, then move to something different. Finally, build on student interest, allowing them to choose the approach that appeals to them. They learn about their own interests, concerns, styles and intelligences. "In conjunction, both Multiple Intelligence and Learning Styles can work together to form a powerful and integrated model of human intelligence and learning - a model that respects and celebrates diversity and provides us with the tools to meet high standards" (Silver, et.al., 1997, p. 27).

Latham (1997) asks this question, is the multiple intelligence theory useful in the classroom? "If they simply want to improve test scores, multiple intelligence may work no better or worse than other theories. But if the goal is to reach as many student's as possible and to acknowledge, celebrate and refine their talents, then multiple intelligence appears to hold great promise" (Latham, 1997, p. 85).

Considerations for Secondary and Post-Secondary Educators

It has been determined, through research, that every individual has a variety of learning styles which is unique to themselves. Whether accepting the theory of Multiple Intelligence or one of it predecessors, educators should not ignore this fact. However, in doing so, it is noted that all secondary learners are similar to each other and post-secondary learners are similar to each other. Both groups are at varying developmental and cognitive stages in their lives.

The developmental stages show a great contrast from between the secondary learners life and that of the adult learners life. Obviously, the learning style of these learners change with the stages of life, whether it be a personal choice or more often, a development put upon them by life itself. Consequently, some consideration must be given to their differences. Learning styles can be assessed with all individuals, but secondary and post-secondary individuals must be treated differently. These discrepancies can be very positive with the learners working together in a collaborative effort. The next two sections of this paper will discuss characteristics of the secondary learner and those of the post-secondary learner.

Secondary Learners

Faculty within post-secondary institutions are realizing that the students they are currently teaching deviate from previous students. The manner in which students obtain and view knowledge is completely different from their instructors. "Unfamiliar with many of the new characteristics, they see contemporary students as hopelessly underprepared, or less bright or motivated than previous generations" (Schroeder, 1993, p. 1). Schroeder (1993) explained how traditionally, the lecture system where the coverage of material through telling, the content was all important and the teacher, who knows all, presents the information to the student, is common to

the faculty. The students however often prefer to have open-ended instruction rather than highly structured instruction.

In order to bridge the gap, an understanding of how students learn and where they are in the process can help faculty to meet their needs. Experimental or active learning is highly effective with new students. Small group discussions, projects, in-class presentations, experimental learning, peer work, team projects, field experiences, working with stimulations and case studies are all examples for faculty. These methods are important because it allows for students to move from concrete to academic values. Also, small groups form supportive learning communities for the students. Finally, it also helps them to apply theories to real-life situations. The "new" student prefers concrete learning experiences and builds toward a more abstract understanding. Therefore, assignments can be designed to allow for this type of learning. These students also need to know precisely what is required of them and they want a great deal of feedback from their instructors (Schroeder, 1993). Schroeder (1993) stated, "what I am suggesting is that an overall understanding of how students learn and where they are in the process can help us meet the needs of the new students who sit in our classrooms (p. 6).

Daniel (1997) discussed the importance of closer communication between high school and post-secondary institutions in the area of information searching skills. University and college librarians complain that students lack the skills to be able to use their libraries and resources successfully. The information explosion has forced librarians and teacher-librarians to make major changes. "Faced with these demands, educational aims have moved to promoting skills which will give students a strategy for coping with the overload of the new information age environment - those included in "information literacy," which can be defined briefly as knowing when one needs

information, where to find information, how to evaluate information, and how to use information in decision making or problem solving" (Daniel, 1997, p. 53). Daniel (1997) undertook a study of the skills required of students in their first year of university and their final year of high school. The specifics found by Daniel (1997) are noted in *High School to University: What Skills Do Students Need?* In summary, academic librarians agreed that few high school students know what a periodical index is or how to use it, many students do not properly use the OPAC systems to find resources they need, and they lack the understanding of library organization.

Daniel (1997) observed that there is a gap in knowledge "because they find themselves in an unfamiliar environment with an enormously increased resource base that is far more complex, less helpful, and more demanding than they had ever anticipated" (p. 56). Students came from an environment which was supportive and caring and teachers gave assignments which were within their capabilities and watched everyone closely. High school students were also overwhelmed with the size of the library, the organization and amount of resources available and often fell into a trap of taking the first thing they find. The information revolution has changed the focus of teaching library skills to the teaching of computer literacy skills with less emphasis placed on how to locate and access information. Daniel (1997) stated that one obvious answer would be better communication between schools and universities which would incorporate joint standards and acceptable levels of skills . The high school teacher-librarian would give instruction to the students in the final year of schooling differently than other populations. This would enable these students the practice of an unstructured assignments, emphasizing more complex library search skills. Academic libraries also have a role to play in the transition stage. They need to simplify and clarify some to the procedures for first year students.

Post-Secondary Learners

Since 1900, nearly 30 years has been added to the life expectancy of individuals. This trend is expected to continue, so that by 2030, a total of 20% of the population will be 65 or older. A number of factors have influenced this change such as the decline in childhood diseases, advances in medicine and the postwar baby boom. This inclination has led to discussions in how this aging population will affect adult education (Imel, 1997). Imel (1997) noted that the amount and type of learning which adults pursue is a new trend and researchers had not been expecting what studies revealed. They showed that adults were learning in larger numbers and larger amounts then previously thought (Imel, 1997). A second trend was the suggestion of age-integrated instead of age-separated programs. "In age-integrated educational programs, older adults become both learners and teachers, sometimes imparting their existing skills and knowledge and sometimes continuing to engage in learning new things" (Imel, 1999, p. 3). A final trend relates to older adults and the use of the Internet. Both the amount of information about and for the older adult was increasing. They were opposing the view that computers are only for the younger person and are using the Internet as both a consumer and a producer (Imel, 1999, p. 3).

As with younger students, the adult student learned in different ways and preferred different learning styles. In, *Mastering the Teaching of Adults*, Apps (1991) recounted that "many people prefer a combination of several learning approaches" (p. 40). He further observed that a variety of learning style inventories have been developed to help learners and teachers understand more about individual differences, such as Kolbs Learning Style Inventory, the Canfield Learning Styles Inventory and Myers-Briggs Type Indicator. In subsequent discussions of learning style, two ideas were explained. First, knowledge of preference inventories can be

helpful, but learning styles are far too complicated to evaluate with one test. Educators could incorporate variety in their teaching techniques in anticipation of meeting the needs of the differing learning styles. Second, many adults have experienced only one learning style, consequently they prefer that style. They could be encouraged to try other learning styles, and may then realize that a different approach is more their style (Apps, 1991).

Verduin, Miller and Greer (1986) characterized adult learners as continuous and self-directed learners who adjust to role changes within their lives. Adults are described as students who put forth an individual effort to learning. Accordingly, when analyzing the adult learning style it is important to consider that they vary greatly in their abilities, display different rates of learning, have a broad range of experiences to draw upon when learning, learn best when things interest them, enjoy hands-on learning, and want to know how they are doing.

"Evidence is rapidly coming forth that indicates adults have quite definite learning styles; they have distinct preferences and dispositions regarding how they wish to learn something" (Verduin et al., 1986, p. 16). The diversity of learning styles within adults was similar to that of younger students. Some preferred lectures, self-orientation, reading, direct explanation and demonstration, multimedia approaches, or hands-on. In most circumstances, they would use a combination of strategies. Many adults moved along a continuum within their learning styles, depending on the situation. The dimensions may move from "dependent/independent, being practical/ideal, doing/watching, talking/listening, accepting/questioning, individual/group oriented, and self-expressed goals/instructor-expressed goals" (Verduin, et al., 1986, p. 16). Educators may keep these factors in mind when working with adults and searching for their best learning style.

Cranton, in *Understanding and Promoting Transformative Learning*, agreed with the notion of adults having a variety of learning styles. The literature does not definitely explain a learning style, thus it is simply stated that people learn differently (Cranton, 1994). To ensure that the needs of the learners are met, it is the role of the teacher to employ an assortment of teaching strategies. "The principle of diversity should be engraved on every teacher's heart" (Cranton, 1994, p. 8).

Cranton (1994) also examined the principle of empowering the adult learner. To do so, individual differences should not be neglected and the educator should be aware of their learning preferences. To aid in this process, the educator should "increase the learners' awareness of their own learning style, psychological type, values and preferences" and "to develop a strong awareness of how learners vary in the way they think, act, feel, and see possibilities" (Cranton, 1994, p. 161). Cranton (1994) also suggested that the educator use one of the various psychological type assessments when helping adults measure their learning styles, such as, Myers-Briggs Type Indicator, the Kolb Learning Style Inventory, or the 4-Mat Learning Style Inventory.

The learning style or processes, in adults, were explained by David Kolb, in *Culture and Proceses of the Adult Learning: A Reader*, as experimental learning. One of the central reasons for calling it experimental was that he felt that experience played a large role in the learning process of adults (Kolb, 1993, p. 138). Kolb (1993) defined experimental learning through the combined characteristics of Lewin, Dewey and Piaget models of experimental learning. The following features represented the adult style of learning by means of experimental learning: "learning is best conceived as a process, not in terms of outcomes; learning is a continuous process grounded in experience; the process of learning requires the resolution of conflicts

between dialectically opposed modes of adaptation to the world; learning is an holistic process of adaptation to the world; learning involves transactions between the person and the environment; and learning is the process of creating knowledge" (Kolb, 1993, p. 143-155).

Joughin (1992) conducted a study to determine the literature of adult learning which "stresses the adult learner's capacity for self-direction and the importance of supportive learning environments" (p. 3). In completing the research, he found that learners respond in significantly different ways to elements of learning. Educators should be aware of these elements and the different cognitive styles of the learners. Structure, analytical ability, responsiveness to affective considerations and authority/responsibility are considered the foremost elements. The author described the elements as: learners will respond differently to external structure, provided structure and their ability to create structure; there will be a difference in their ability to master situations; learners will respond differently in their need for support, relationships and their ability to learn with a social group; finally learners will respond differently to authority, facing authority and their willingness to accept personal responsibility (Joughin, 1992).

Conclusion

Both the adult and high school learner should be encouraged to recognize and develop their own particular learning style. A learning style inventory, whichever is used, "should be used to take a snapshot of an individual in a particular situation, at a specific point in time. It should not be used to take a group portrait" (Burns, Johnson & Gable, 1998, p. 280). All students regardless of age or educational level may learn more efficiently if they are given the possibility of learning within their own, individual "comfortable zone." For optimal learning to occur, one ought to be given the opportunity to operate within their style. At the same time, there should be

enough flexibility given to learners to develop other styles. When Shaughnessy (1998) interviewed Dunn she had completed an experimental study which "revealed that students whose characteristics were accommodated by educational interventions responsive to their learning styles could be expected to achieve 75% of a standard deviation higher than students whose styles were not accommodated" (p. 141). Buchanan, McDermott and Schaefer (1998) also concluded, "a variety of successful research programs and available instructional materials have shown much promise for the application of enrichment and remediation procedures based on information from the Learning Behaviors Scale assessments" (p. 359). Instructors should also acknowledge that a variety of learners requires a variety of teaching styles and effort should be made, at all teaching levels, to ensure that a variety of techniques and strategies are used when presenting information to and gathering information from learners. According to Dunn, if a teacher is not teaching according to learning style, students will probably not achieve what they are capable of achieving (Shaughnessy, 1998).

DEVELOPMENTAL STAGES/TEACHING TECHNIQUES AND THE LEARNING PROCESS

Introduction

All learners, regardless of age, learn in different ways. They are comfortable studying and gaining knowledge using a variety of strategies. As concluded in Paper II, "Learning Styles / Teaching Strategies: Bringing them together for Optimal Learning," the literature appears to provide evidence that when a student is working within their own style they are more likely to develop their education and possibly cultivate other styles and intelligences. A learner, whether in primary school, high school, or in college, have characteristics which are a part of their development stage or phase in their life cycle. However, an instructor of students should also realize that individualism is important, displaying an assortment of personalities, values, attitudes and experiences.

Nonetheless, if consideration is given to bringing the educational systems together in a collaborative effort, as discussed in Paper I, "Partnerships between Secondary and Post-Secondary Institutions," a greater understanding of the development of students at all levels is needed. This final paper, will review the stages of development of the adolescent student, the adult learner and the older student. Emphasis will be placed on discussing characteristics of the adult learner to contrast how they are different from their younger learner counterparts. Additionally, it will address issues which an instructor of each can consider and strategies which are viable to ensure that valuable learning occurs.

Defining Teaching and Learning

Teachers have an important role of empowering learners by helping them to take charge of

their learning and helping them to learn how to learn, regardless of age. The process of life-long learning and learning how to learn is the challenge teachers can accept. The poet Guillaume said it this way:

> Come to the edge, he said
>
> They said: we are afraid.
>
> Come to the edge, he said.
>
> They came.
>
> He pushed them...and they flew. (Apps, 1991, p. 1)

Maybe not everyone should be pushed, however some may consider that they can to be guided to stretch to their fullest potential. Apps (1991) described master teachers as those who "are helping build cathedrals in the minds of the learners with whom they work" (p. 5). It may be helpful for these teachers to comprehend the developmental stages of their students to entirely be a master teacher and to aid in the process of learning.

Cranton (1994) additionally stated that there have been a variety of theories of learning throughout the years. The 1950' s saw development of the behaviorist theory. Behaviorists saw learning as a "change in behavior that occurs as organisms respond to stimulation from the environment" (Cranton, 1994, p. 8). The 1960's brought the humanists who "viewed learning as personal development resulting from interaction with others or as non-directive facilitation of self-awareness" (Cranton, 1994, p. 8). The 1970's initiated the cognitive psychologists. They "described learning as changes in memory and as a product of individual information processing mechanisms" (Cranton, 1994, p. 8). In 1975, Mezirow developed the theory of transformative learning. An adult sees the world through his or her own perspective. This perspective is

influenced by one's values, assumptions and beliefs. Mezirow stated that "individuals are products of their knowledge (epistemic meaning perspective), their upbringing and background (sociolinguistic perspective), and their psychological development (psychological perspective)" (Cranton, 1994, p. 42). These theories provided the foundations for present work in the study of learning.

Rogers (1993) stated the definition of teaching as the "facilitation of change and learning" (p. 229). Educators can equip students with knowing how to learn. In Rogers (1993) opinion, an educated person is one who has likely learned how to learn, can adapt to change, realizes that knowledge is not secure, and only the process of acquiring knowledge ensures security.

Rogers (1993) went on to decipher what qualities facilitate learning. The person teaching should show the attitude of being real and genuine if he or she is to be effective. The learner needs to feel that the facilitator is not putting on a facade. To be successful the facilitator should be prizing, accepting and trusting. "Prizing the learner, prizing her feelings, her options, her person. It is caring for the learner, but a nonpossessive caring. It is an acceptance of this other individual as a separate person, having worth in her own right. It is a basic trust - a belief that this other person is somehow fundamentally trustworthy. Whether we call it prizing, acceptance, trust, or by some other term, it shows up in a variety of observable ways" (Rogers, 1993, p. 232). A third quality needed is a climate of showing empathy. The teacher who is sensitive understands the student's reaction from the inside. In this type of an environment the student feels trusted and is able to develop. For a master teacher to meet Rogers (1993) definition, they are required to recognize the developmental stages of their particular learners.

Why students are learning is another question which should be clearly understood by the

instructor. Some students learn for rewards or for achievements: "for example, good grades, recognition, or money" others learn "for a sense of accomplishment, or perhaps simply to make their lives easier." (Ormrod, 1990, p. 4). Why people learn is often dependent upon the stage they are at in their lives.

Two theories in defining learning are the behaviorists and the cognitivists. The behaviorists defined learning as a relatively permanent change in behavior due to experience. It explained a change in external behavior that can be observed. They focused on the learning of tangible, observable behaviors. In viewing the behaviorist approach a number of contemporary psychologists expressed that this theory is more appropriately associated with what influences the performance of learned behaviors, rather than modifying learning itself (Ormrod, 1990). Therefore, since learning is defined as a change in behavior due to experience, two implications should be noted. Students should be active in the learning process rather than passive listeners. They should experience, talk, write and do. The assessment of student learning is essential. One must observe that student learning has taken place. Improved test scores or improved study skills show that learning has occurred. A behaviorist would focus on drill and practice, the methods for breaking habits and would give attention to the consequences of behavior (Ormrod, 1990).

The second school of learning is known as cognitivists. Learning was defined as a relatively permanent change in mental associations due to experience. Cognitivists focused on internal change in mental associations which cannot be observed, "for example, the way a child interrelates addition and subtraction facts, the memory gimmick a student uses to remember French vocabulary words, and the idiosyncratic meanings a student has attached to her understanding of basic physics principles" (Ormrod, 1990, p. 6-7). They focused on the thought

processes involved in human learning rather than behavioral outcomes. Cognitivists help us understand how people learn a variety of involuntary responses. For example, becoming sick at the sight of a particular food, falling asleep when it becomes dark or a fear of bees. A number of characteristics are associated with this theory: extinction, spontaneous recovery, stimulus generalization, stimulus discrimination, higher-order conditioning, and sensory preconditioning (Ormrod, 1990). When adhering to this theory, educators, who are familiar with the concept, are likely to point to the need for a positive classroom environment. A student should not associate school, teachers and learning to punishment, humiliation, failure or frustration. A cognitivist theorist would state that learning will be an unpleasant experience within this situation. Students may become anxious and uninterested in learning. Teachers should try to make any learning experience pleasant and failures infrequent.

Although effective teaching and learning can be defined, guaranteeing that it transpires with students may be more difficult than remembering these definitions. Students are a complicated and complex person. They can learn depending on a variety of things. The young student, the teenage student, the college age student and the older student have a range of differences which should be considered.

Differences Between the Adult Learner and the Child Learner

Operational Changes

Westmeyer (1988) discussed the different ways in which an adult learns as opposed to a child learning. The ideals of Piaget were used to show how changing operations in the mind affect how people learn. The change is inexorable, although the timing may be different.

Generally, preschool learners are concrete operational, very dependent, enthusiastic, but

not sure what they are enthusiastic about, and think of themselves as kids. Predominately, elementary school learners are still concrete learners, they are becoming independent, still enthusiastic, but can now decide what they are enthusiastic about or not, they are willing to learn, feel that the teacher will get them to do things that are good for them, they think of themselves as students and career interests tend to be imaginative. The high school learners often move into formal operational mode in which they are independent (from parents, but dependent upon peers), apathetic about much learning (do not see the need for it), and begin to define career goals. Their interest in the opposite sex may be the major motivator for particular learning, and they frequently have part-time jobs to aid in their quest for independence (Westmeyer, 1988).

Essentially, students begin to move into other mind-sets as they leave high school and enter the college-age status. Frequently, younger college-age learners are formal operational, somewhat dependent on parents, socially oriented, financially concerned, job-oriented, have a desire for practical education, are motivated by perceived realities, and have defined career goals, frequently have part-time jobs, think of themselves as intellectuals, as college students, as future leaders and view themselves as adults (Westmeyer, 1988).

Older college-age learners (24- 40 years) are often not much different from their younger peers, however they sometimes have broader experiences, they do not see themselves as students, they identify themselves with a social group and their families rather than other students, they are psychologically more conservative, their work experience, family ties and parental roles motivate them quite strongly and they are probably in college to learn new job skills (Westmeyer, 1988).

Usually middle-aged learners are fearful and hesitant about learning even though they may have strong self-concepts, they have a "now or never" feeling about education, they feel a need

for change, they are full-time adults and life takes precedence over learning, they resent "busy work," the language of education and formality of classroom discussion are foreign to this group, they have a rich background of experience and quickly find ways to relate this to the classroom, the student-professor fear is reduced, grades and peers are not as important as younger students and they are more likely to be critical of professors and are also more willing to try what the instructor suggests (Westmeyer, 1988).

Retirement-age learners are generally self-confident when it comes to learning, goals have more to do with personal satisfaction therefore are less critical of instructors, they are motivated more by intrinsic interest than relevance, learning may be the important thing in their lives, they have an extremely large background of experience, they are willing to try, frequently self-deprecatory as a precaution, somewhat slower physically, good at learning problem-solving procedures, relatively poor at memory learning and may require more time and practice to learn (Westmeyer, 1988).

Developmental Changes

Glickman, Gordon and Gordon (1998) in *Supervision of Instruction: A Developmental Approach*, discussed four types of development within an individuals life. Firstly, hierarchical stages include cognitive (Piaget, Perry, Belenky), moral (Gilligan and Kohlberg), conceptual (Hunt), ego, (Loevinger) and concern (Fuller) development. Secondly, life cycle phases include goal phases (Buhler), critical issues (Erikson) and stability verus transition (Levinson). Thirdly, transition events include critical events (Brim and Ryff), stressful events (Fiske) and on time/off time (Neugarten). Finally, role development includes family, work and self (Juhasz) and love, work and learning (Merriam and Clark).

Glickman, Gordon and Ross-Gordon (1998) discussed stage development theories and how they affect the life of a learner. Piaget described four stages of cognitive development: sensorimotor, preoperational, concrete operations and formal operations. The first two stages were appropriate to child and youth development and the final two stages were applicable to adult learners. Some researchers have added a fifth stage of postformal operations for adult development (Glickman, et al., 1998). They began with Piaget's four stages of cognitive development, sensorimotor and preoperational stages which are relevant to childhood and concrete operations and formal operations which are relevant to adults. At the concrete operations stage, the "individual can perform intellectual functions, such as reversibility, conservation and ordering. The person at the formal operations stage has already progressed beyond reasoning only for the "here and now" and can project into and relate time and space" (Glickman et al., p. 57). A person at this stage uses hypothetical reasoning, comprehends complex symbols and devises abstracts concepts. It is interesting to note that some researchers express that not all adults reach the formal operations stage (Glickman et al., 1998).

Linked to cognitive development is the notion of conceptual development. "Hunt and others defined conceptual level in terms of increasing conceptual complexity, as indicated by discrimination, differentiation, and integration and increasing interpersonal maturity, as indicated by self-definition and self-other relations" (Glickman et al., 1998, p. 58). Hunt defined the conceptual development with three stages: low conceptual level (concrete thinking), moderate conceptual level (moderately abstract thinking) and high conceptual level (highly abstract thinking). A person develops "in terms of increasing conceptual complexity, as indicated by discrimination, differentiation, integration and increasing interpersonal maturity, as indicated by

self-definition and self-other relations" (Glickman, et al., 1998, p. 58). A person with low CL (conceptual level) views things in a simple, concrete fashion; persons with moderate CL are becoming more abstract in their thinking, and persons with high CL are abstract thinkers, independent, self-actualizing, resourceful, and flexible. Again, as with the cognitive levels, most younger students have a low conceptual development level and as they grow older they move into a higher level of conceptual development.

Glickman et al. (1998), also addressed levels of moral development and ego development. Kohlberg cataloged morality in three categories: preconventional level, conventional level and postconventional level. A person moves across the three levels, "reasoning shifts from a self-centered perspective to one that increasingly considers the perspectives and rights of others" (Glickman, et al., 1998, p. 59). Quite often the development of both are linked to age. The younger the student the lower the level of development, whereas the older the student the higher the level of development. Moving across the levels, there is a shift from self-centeredness to increasingly considering the rights and perspectives of others.

Ego development was cataloged by Loevinger within 10 stages. According to Loevinger, ego development was characterized through seven stages and three transitional stages: the presocial/symbolic, impulsive, self-protective, a transition level between self-protective and conformist, conformist, transition between conformist and conscientious, conscientious, transition between conscientious and autonomous, autonomous and integrated. The lower stages of development depends on others to find solutions for problems. The middle stages of ego development exhibits conventional behaviors and at higher stages, the adult becomes more individualistic, autonomous and integrated. Adults at the earliest stage may be fearful, those in

the middle stages are conforming, whereas the highest stages are autonomous adults. Gfellner (1986) executed research on ego and moral development in relation to age and grade level during adolescence. It was found that "both ego and moral development seemed more closely related to grade level than to age" (Gfellner, 1986, p. 147).

Gfellner (1986) concluded that there was indeed a sizeable relationship between the ego development and moral development. These correlations were controlled by age, especially during secondary level education. The researcher also determined that ego development increases during adolescence, therefore moral development must increase at this age as well (Gfellner, 1986).

Life cycle phases, transition events and role development have been studied by a variety of researchers. As an individual reaches the age of 18-20 years, they focus on careers, life dreams, marriage, and home. The issues of intimacy, isolation, and self-absorption or critical issues, such as childbirth, death of a spouse, and unemployment are the center of the adult learners life. These issues were not concerns of the secondary learner. Other social issues and events become different priorities as a person moves from stages in life (Glickman et al., 1998).

Krupp (1987) further considered the dissimilarity between the child learner and the adult learner. Adults perceive education very differently than their younger counterparts. "They have confronted the illusion in their dreams, have faced the dualities of individualization, and have experienced the challenge of career and family issues" (Krupp, 1987, p. 42). They have new views, different problems, mind sets in areas and flexibility in others. Krupp (1987) stated that "with an in-depth understanding of developmental forces and of motivational tools we can, at worst, minimize those forces and, at best, turn them into a positive force" (p. 42).

The different developmental stages of the learners can lead to teaching and learning styles of the instructor being in direct correlation to the age of the student. Bringing together all levels of education may have its benefits, however things should not be done without study of the learners and the discussion that each should be instructed in a manner which will benefit the individuals. A closer look at the post-secondary learner is necessary to clarify their individual needs and to uncover how and why they must be considered different from the younger learner. The next section of this paper will examine them independently.

The Adult Learner

Definition of Adult Learning

The definition of an adult learner varies as much as the individuals who compose them. Cheryl J. Polson (1993) expressed the notion that there is no single definition for an adult student or learner, therefore an adult learner is anyone who takes part in any formal or informal learning. Cranton (1994) stated that an adult learner might be anyone who "take classes to fulfill requirements in a Ph.D. program, participate in a training session her organization requires that she attend, learn how to ski, or join a self-help group in order to understand her reactions to the death of her spouse" (p. 4). Apps (1991) articulated that adult learning occurs if it consists of "an accumulation of information, change in behavior, improved performance or proficiency, a change in knowledge, attitudes, and skills, a new sense of meaning, cognitive restructuring and a personal transformation" (p. 34). The completion of any one of a variety of curricula may be considered learning for an adult.

Squires (1993) also attempted to define adult education. "In educational terms, the definition of adult tends to come later rather than earlier, primarily because there is already

distinct provision for 16 to 19 year olds and for some 18 to 21 year olds in higher education. Adult education therefore is often thought to begin where these end, and is sometimes referred to as "post-initial" for that reason. Some institutions even use the age 25 to distinguish between ordinary and mature students; whereas others are more concerned with the number of years spent outside the educational system. By contrast, some regulations specify only post-compulsory (16) and post-secondary (18) status (p. 87). It appears to be clear that definitions of adult in adult education, are not clear.

In circles of adult learning theory, the theory of andragogy was popularized by Malcolm Knowles. Knowles definition of adult learning consisted of four basic assumptions: "Adults have a psychological need to be self-directing, adults bring an expansive reservoir of experience that can and should be tapped in the learning situation, adults' readiness to learn is influenced by a need to solve real-life problems often related to adult developmental tasks, and adults are performance centered in their orientation to learning - wanting to make immediate application of knowledge"(Glickman et al., 1998, p. 54). Knowles has added a fifth assumption since first conceptualizing this theory that describes adult learning as primarily intrinsically motivated. Glickman et al. (1998), noted that this theory is not uncritically accepted as it once was. However, it is still often used as a broad guide for the thinking of adult learning.

Regardless of which definition is accepted, research has shown that adult students and adult learners are very unlike their younger counterparts. Many aspects of life affect their learning. In turn, the instructing of these students is also affected. A closer look at these affecting factors could be beneficial.

Developmental Factors Affecting the Adult Learner

Individuals go through developmental stages and hold characteristics and face issues which are part of that phase in a life cycle. "Understanding the main developmental tasks and issues of each age leads to better insights into the needs of each member" (Krupp, 1983, p. 38). A teacher or instructor should capitalize on the differences and use them to aid in the learning of students.

"An adult's concept of self and the world changes with aging. Adults modify their view of career, family, youth, destructiveness, and involvement" (Krupp, 1987, p. 20). A teacher or instructor should try to comprehend the forces which are affecting the adult life. Without doing so, effort and time can be wasted, while trying to teach these students. Normal life development brings about changes. For example, younger students are interested in "how to" to do things, whereas the older adult student is more interested in personal growth and development which empowers them (Krupp, 1987). Recognizing the different needs and developmental differences are important when teaching an adult.

Krupp (1983) began her theory with early adulthood (ages 17-28) which is a time when individuals try to establish a structure for themselves, but keep their options open. This is true in terms of a relationship and a career. At this age, people often seek direction and may need help from others including counselors. Krupp (1983) stated "a person's dream represents the essence of that individual and provides educators with a key motivator for that adult" (p.39). Within their twenties they often establish this dream and seek a mentor - someone who they feel has "made it".

Age thirty (ages 28-33) is a transitional time is often time when the individual person is

determined and the view as to where he or she fits within the world. Krupp (1983) felt that "part-time careers permit the involved persons to integrate their family and career lives more effectively. They appreciate both the extra time with family and the continued opportunities for career satisfaction. They tend to feel less conflicted and work more efficiently" (p.40). It's a time when one realizes that adult life is for real and decisions are made. There is a focus on career, one's own identity and relationships. The adult, at this age, questions what they did in their twenties and what roles they play are really them.

Men and women between the ages of 33 and 39, often seek advancement in a variety of different areas, such as social, personal and in employment. Both sexes seek stability and do not want to make accommodations to do so. "Adults begin to order priorities in a time frame now perceived as a limited time left to live rather than an endless expanse of future ideas," therefore "time wasted is time lost' for these individuals" (Krupp, 1983, p. 41). Individuals may also give up their mentors at this point, and recognize the illusions they created in the goals and dreams they set for themselves. It is interesting to note that women often do not experience as much disillusionment as men because they were more realistic about setting life goals.

The midlife transition (ages 40-47) is again a chance for individuals to re-define themselves in relation to the world and they seek to find fulfillment in areas that were once neglected. The adult, at this age, re-defines him/herself on four areas. First, they recognize that they are both young and old - the sandwich generation (Krupp, 1987, p. 27). The way in which they integrate the young ideals into the new stage of life determines success for the future (Krupp, 1987). A person's legacy, what she or he leaves behind, becomes a motivator. Second, adults realize that they cannot avoid destruction no matter how hard they try to change this fact.

Consequently, they are more understanding of others who make errors. At this age, they serve as great mentors. The third aspect of life is, they enjoy time alone and savor the opportunity to be separate from others. They use this time to become more productive and creative. The final characteristic is dealing with those parts of life which have been neglected. Often, the men become more nurturing while women become more assertive (Krupp, 1983).

The final stage discussed by Krupp (1983) is between the ages of 47 to 60+. At this period, the adult becomes mellow. They feel they have done their thing and why bother to get upset about the way things are. They become concerned about retirement and health issues. Also, they are at the point when they need to feel a "sense of personal worth for skills" (Krupp, 1983, p. 44). Adults, at this age, what to feel that they have the skills which other people require and want to learn from them.

Krupp (1987), in a later article, further described the older adult as a person who represents four major themes in the second half of his or her life, those being: de-illusionment, individuation, career and family.

Disillusionment begins with the adult evaluating where they are in life. Throughout their thirties men and women work to achieve their career-related goals. In their late thirties and early forties some achieve this dream, others do not. Those who reach their ambitions, question "Is this all?" They realize that there is no "I'm there" and by reaching their goal they have not solved all of their problems. Successful adults may begin to re-evaluate their priorities. The adults who did not reach their goals by early forties begin to question their abilities and their future. They realize that dream fulfillment is not necessary for self-worth. They ask, "What do I do now?" Both those who achieved their goals, and those who have not, ponder the meaning of life (Krupp,

1987). Those adults who have problems with disillusionment "need help in seeing the options" (Krupp, 1987, p. 26). The realization that certain things will never be results in a freedom of creativity for less essential dreams and the insight that failure is not devastating.

The theme of individualization is the second theme which adults encounter. The adult analyzes his or her life and realizes that parts have been ignored. They wonder about the future and what it all means. This theme deals with four polarities, according to Krupp (1987).

- The young-old duality explains the feeling of being caught between youth and old age
- The destructive-creative duality explains the feeling of one being destructive even when you are trying to create
- The attached-separate duality explains the need for aloneness to discover the inner-self when previously one wanted attachments to others
- The male-female duality explains the difference within men and women during younger years - men being assertive and women being nurturant. In later years men become nurturant and women become assertive leading to a greater understanding of each other (Krupp, 1987).

Career is a third theme which is important to an adult during the second half of life. People begin to question all of the time spent on a career, maybe at the expense of family or self. They often experience a gap between what they expected to feel at this moment and what they actually feel. Therefore, the career becomes less of a pivotal point for life, and family or leisure activities are assumed. Adults may do one of two things. They "take control of their lives, define goals and modify career-related aspects of their dream" or "the poorly adapted become on-the-job

retirees" (Krupp, 1987, p. 36). Additional issues are the feeling of loss of control over things, such as your body or children, and the notion of retirement effects, can I afford it? and what will I do? (Krupp, 1987).

The final theme is that of the transformation of the family. The midlife individual faces a large number of changes within the family such as a parent dying, children leaving home, wives asserting themselves, men becoming nurturing, health problems developing, grandchildren entering the family, or a spouse dying. "These myriad of changes cause men and women to constantly renegotiate their relationship with spouse, children and parents" (Krupp, 1987, p. 41). Some do this positively and maintain a strong relationship, while others grow apart resulting in a high divorce rate at this age. All adults, at this stage are constantly contending with the notion of their own mortality (Krupp, 1987).

Characteristics of the Adult Learner

Several other researchers of adult learning (Verduin, Miller and Greer, 1986; Apps, 1991; Polson, 1993; Squires, 1993; Tennant, 1993; Cranton, 1994; Westmeyer, 1988) illustrate the different characteristics of this particular group of students.

The authors, Verduin, Miller and Greer, studied the notion of lifelong learning and the need for it. "Adult learners, like their younger counterparts in public schools, are very much individuals with their own personalities, including needs, values, attitudes, beliefs and self concepts" (Verduin et al., 1986, p. 12). The personality of the adult controls how they behave and their background has helped form their needs, values and attitudes. These personalities have been fashioned over a long period of time and greatly effect the education they choose. The life roles and life cycles of adults often effect their learning, as well. "Influence on adults come from

their roles in their occupations, their families and their communities. As changes occur in these major life roles, changes will occur in adults' reasons for more learning" (Verduin et al., 1986, p. 13). Adults move from the leaving home stage to postretirement stage. Many things, work, family, community, social activities, health and learning interests, affect adult education. "All of these factors argue for the fact that adult and continuing educators must know each individual adult, his/her roles and current cycle, and what each adult's environment is like, which can lead to the reasons for more desired learning" (Verduin et al., 1986, p. 13). The reasons for the adult getting involved in education may vary from practical, job related or personal intrinsic ones.

The adult learner, according to Apps (1991), was described has having a number of characteristics which are similar. Firstly, the learners history can and likely will greatly affect the way the adult learns. Their previous experiences and how they perceive things can influence with how they work with new information. Secondly, each individual may have a different learning style - the way they process information. The social setting for adult learners is the third characteristic. Most adult lives include a family, work and other responsibilities which will affect where, when and how much time they can spend on learning. The fourth common characteristic is their motivation for learning. Often, it is closely related to work and advancement in work. Apps, describes the fifth characteristic as psychological dimensions. Adult learners are sometimes unsure of themselves and very soon, within the course of study, wish to know if they are being successful or not. The final similarity of adult learners is their preference for the practical. They want to learn something which they can apply immediately to their lives (Apps, 1991).

Polson (1993) concluded that there are no specific characteristics which can be applied to each adult learner, however a number of general features are noted among these students. Adult

students were preoccupied with multiple roles which will strongly impact the amount of time and energy they can spend on their life as a student. Unlike their younger counterparts, adult students are not often full-time students, but are busy working, being a parent, a spouse, or involved in their community. An instructor should realize that school is probably not their top priority. Polson (1993) notes that "these non-academic interests and commitments must be recognized - and at times honored," by instructors at any post-secondary institution (p. 2). Adulthood brings with it obligations which often takes precedence over school.

Life experiences are something which adult students bring to their learning. They obviously have more knowledge about life than the younger students. Polson (1993) maintained that this may have a positive influence on learning because "it provides a rich resource for learning and a foundation upon which to build new knowledge" (p. 2). However, it may be a negative influence if past instances created a barrier to further learning. This may be counterbalanced however since "learning for adults frequently involves a process of reaffirming, reorganizing and reintegrating ones previous experiences" (Polson, 1993, p. 2). Instructors ought to keep this in mind when teaching the adult students.

Adults also have a variety of developmental tasks. Adults of different ages go through stages in their lives. Developmental theorists employ that adults go through developmental stages which include periods of transition and stability. "Theorists suggest that each of these developmental stages presents unique developmental tasks which must be addressed" (Polson, 1993, p. 2). In any class, an instructor may be working with students ranging from ages 25-65 or more. These students may be at a variety of developmental stages. Fifteen students could mean as many as fifteen different life transition stages and the reasons for being in school are specific to

each individual person.

Other characteristics normally common among adult learners were addressed. Many of these learners are off-campus, therefore are not involved in campus life. In turn, they relied on an instructor for support and help relating to services. Frequently, these students had little or no experience with post-secondary learning or their experience was obtained many years ago. "Consequently, they relied on their instructor rather than a student affairs person to help with a variety of issues: adjusting to the college/university setting, with understanding academic procedures, developing study skills or locating needed resources" (Polson, 1993, p. 3). Unlike the younger student, the adult often had a clear educational goal and did not spend time wondering before developing an educational agenda. This may be linked with the final characteristic explained by Polson, that being the adult student was often paying for their education and the decision to go back to school is one that is made while sacrificing other possibilities.

Squires (1993) explained that adult education considers certain factors which are a part of a persons life. Squires (1993) in his discussions placed emphasis on a model which described three influences on adulthood: "biological aging, social experience as a member of a particular generation or group and individual life-events"(p. 91). Biological factors are important during childhood and old age, more so than during midlife. Generational factors become more important as the individual becomes a part of society and declines as a person ages. It is suggested that "the cumulative effect of these is to make individuals more different from one another as time goes by, and hence he argues that their importance increases with age. The implications of this theory is that education for adults is inherently diverse and that there are often a few, if any,

commonalities in the lives of the students. If there is a particular flavour or emphasis in the adult curriculum it is likely to lie in the greater importance of social and personal considerations in what is taught and how" (Squires, 1993, p. 105). Often, life events, such as a job, getting married, children, unemployment, divorce, or deaths, in adulthood play a major role in a persons life.

Tennant (1993), another adult learner researcher, positions the adult stages into the following categories. During late adolescence and youth (16-23) an individual is concerned with achieving emotional independence, preparing for marriage and a career, choosing and preparing for a career, and developing an ethical system. Early adulthood (23-35) consists of deciding on a partner, starting a family, managing a home, starting a career and assuming civic responsibilities. Adapting to a changing time, revising career plans and redefining family relationships were characteristics of midlife transition (35-45). Middle adulthood (45-57) is a time when a person maintains a career or develops a new one, reestablishes family relationships, makes mature civic contributions and must adjust to biological changes. Within the late adult transition (57-65) an individual was mostly concerned with planning for a retirement. Late adulthood (65+) lent itself to adjusting to retirement, adjusting to declining health and strength, becoming affiliated with late-adult age groups, establishing satisfactory living arrangements, adjusting to the death of a spouse and maintaining integrity. (Tennant, 1993).

Cranton (1994) also discussed eight characteristics which are often common to adult learners. Unlike traditional students, the adult learner was seen as;

- voluntary,
- self-directed,
- practical in nature,

- often participatory (or collaborative),
- involved in the sharing of experiences and resources,
- involved in learning which was unrelated to the individuals self-concept,
- involved in learning which was anxiety-provoking, and
- involved a diversity of adult learning styles.

Cranton (1994) also described the developmental tasks of learners which should be taken into consideration. During early adulthood (ages 18-35) the learners were concerned about selecting a mate, living with a marriage partner, starting a family, raising children, managing a home, getting started in a career, taking civic responsibility and finding a social group. Middle age students (ages 35-60) were very interested in achieving civic and social responsibility, establishing and keeping an economic standard of living, helping their children to become adults, developing leisure activities, relating to one's spouse as a person, accepting the changes of middle age and adjusting to aging parents. The students who are in their years of later maturity (60+) were adjusting to declining physical health, adjusting to retirement and a reduced income, possibly the death of a spouse, establishing relationships with their age group, meeting social and civic obligations and establishing physical living conditions.

Westmeyer (1988) examined the different considerations of adult students at various stages. The author revealed that if you are teaching a typical college age student you should not be surprised when they are more concerned about finding a mate and starting a family then the great ideas you are passing on to them. Middle age learners may be absent from class for a variety of reasons, such as meetings they must attend. Older students are probably in your class to socialize and may have to miss classes for physical reasons. Each age group of adults have an

assortment of other responsibilities which will impact their education. Each should be considered when teaching them.

Younger college students will be experiencing stress as they begin their life away from home (Westmeyer, 1988). They may have recently moved out of their parents home and are now responsible for managing money, managing time, and how to study. The competition in college is difficult for some students to adjust to. They are used to being in a class where they are the top, whereas all of their classmates in college are on the same level. The requirements in college are very different from the work they had to produce in high school. Stress is also added as students meet students with very different value systems from their own. They have to learn to deal with the differences as they try to maintain their own systems. Professors often provide a role model for these students without realizing this responsibility. Quite often these students change during their college years. As they progress "they become more polished, more mannerly, better able to play the college game, less dogmatic in their ideas, more open to new ideas and generally less conforming and more creative" (Westmeyer, 1988, p. 25). They are no longer the nervous, struggling student who began college.

Older learners are very different from the younger, typical college-age student. They are more self-motivated, and their self-concept, either positive or negative, has been firmly established. The professor can help that person to learn, in spite of his or her attitude (Westmeyer, 1988). This older learner may add much to the class because they do not want to be a by-stander, but want to be involved, they have experiences they want to share, have a broad knowledge and feels that participating will help them to become a more efficient learner. These learners are also eager to "get on with it." They feel that time is compressed and do not want to

waste any of it. Rote learning is difficult, unrelated learning is hard, and learning things where manual strength is required is perplexing. However, they can deal with problem-solving better, and learning which relies on their prior experiences.

These studies have provided information to suggest that adult characteristics, life roles, developmental tasks, motivational issues and general life experiences are very unlike those of the younger learner. It follows that, the implications for teaching or instructing the adult student are varied. These considerations are not necessary within a regular, day-school system. The significance of "life" for the adult instructor will be discussed in the next section of this paper.

Teaching and Evaluating the Adult Learner

Implications for Evaluating the Adult Learner

Tennant (1993) indicated that developing educational classes for adults should take into consideration adult development. "The various roles of adult life are inevitable and people must learn to cope with them as they arise; and that adult education agencies, if they wish to be successful, should gear their marketing and instructional activities to cater to the different needs of adults at different life-stages" (Tennant, p. 119). These developmental stages will likely bring implications for the teacher.

All of the characteristics, common to the adult learner, result in implications for the teacher of this student. First, instructors should realize that the traditional teaching practices, which were accepted by the younger students, will probably not be tolerated by the adult student. They should be aware of the differences and try to implement the following suggestions noted by Polson (1993). Adults are generally acquiring higher education to meet specific, identified needs. Thus, they will want to know how a course will meet their needs. An instructor should make an

effort to find out why the student is back to school and doing this specific course, they should also gather more information about the student and their life and finally be prepared to use alternative exercises and be flexible.

Adult students are looking for contribution to everyday tasks when they return for higher education. Being task-oriented, they expect their learning to be applicable to their responsibilities daily. To enhance this, an instructor may get the students to write case studies based on their experiences, acquire the assistance of previous graduates, have students interview a professional in the field and in any way transfer the real world into the classroom (Polson, 1993).

Experiences which the adult has encountered impact the teaching and the learning of that student. If an instructor neglects these experiences the student may feel it is a rejection of themselves. Their histories should be built upon and an effort made to relate it to the new information being learned. It is sometimes difficult to associate something new with information which has been previously learned. An instructor should help the student integrate the new with the old. Adults have already developed some preconceptions, an awareness of this could help the instructor work with it. To do this, one may role play situations which the adult is familiar with, pose questions regarding the previously learned information, or use analogies and metaphors (Polson, 1993). Occasionally, the adult student will react emotionally to new ideas. Understanding this may be of benefit to the instructor. Polson (1993) referred to it has "a normal pattern of learning" (p. 4). The student could then be given transition time to assimilate the new information.

The aging process also has an effect on adult learning. These students may "have experienced a decline in vision, a decline in reaction time or a decline in short-term memory"

(Polson, 1993, p. 4). Simple arrangements may ease the learning for such students such as using large print, operating both audio and visual formats, and providing hand-outs or copies of the instructors notes.

To aid the slower reaction time and not negatively affect the outcomes for the older student keep the following things in mind.

- They sometimes perform poorly on timed or multiple-choice tests and on tasks which require psychomotor skills. Adults are normally concerned with accuracy and the timing frustrates them. To alleviate this an instructor should use a variety of instruments for measuring the students learning (Polson, 1993).
- Short essay tests, self-directed assignments, peer teaching, interviews or allowing them to judge for themselves the amount of time which they require to complete a task (Polson, 1993).
- By appealing to a variety of senses an instructor could help those students who have experienced some short-term memory loss. Again, by linking the information to previous experiences, allowing the students to apply the information presented, working on a case study, performing an experiment, giving hints on how to organize the material, progressing at a slower speed and/or beginning each lesson with an overview of what was covered in the preceding lesson, may help to reduce this problem (Polson, 1993).

Creating a positive learning environment is a final concept presented by Polson (1993). Adult students are often insecure about their new learning situation and they frequently feel that they will not succeed. To guard against this the instructor may try some of the following

recommendations: provide support and encouragement when presenting new skills, ensure a non-threatening learning climate, make them feel a part of the learning community, keep the physical environment comfortable and arrange the seating to the students preference for comfort and learning (Polson, 1993).

Creating a Good Learning Environment

Apps (1991) also evaluated the need for a good learning environment. A good learning environment is necessary to add special interests to the class and to help individual learners with their own personal styles and uniqueness. Apps (1991) again discussed a number of tools to aid in generating this environment: humor, atmosphere creators, introductions, group workshop planning process, brainstorming, potluck meal/snacks, alternative classroom, learning celebrations, study group, individual conference, and self-confidence building. Humor can be a very powerful tool, but using it improperly can be a big mistake. Experiment with it. Arranging chairs in a different order, greeting people at the door, anticipated breaks or passing out an agenda can all aid in creating a good atmosphere in the classroom. Allow the participants time to get to know each other. Ask the students to interview the person beside them, provide name tags and use small group discussions for introductions to the class.

Once the class is established, begin the process of discovering the individual learner needs and interests. It is a learning session where the most important theme is the needs or expectations of those involved in the group. To locate ideas quickly, a brainstorming session is warranted. This section can further be refined by the group prioritizing the items. Circles can be drawn around an idea and probed advanced with a web. To add a social dimension to the group potlucks may be integrated. If the class meets in the same room for all sessions a change in

scenery could renew interest. Meet in a different location, but be sure that everyone is aware of the new room location. Encourage the class to form study groups of five or six to help each other through assignments or new topics. An instructor should assure that they are available, outside of class time, for students. Individuals may be much more comfortable to ask questions in this setting then they would in a classroom situation. "Students sometimes lack confidence in themselves, more especially adults" (Apps, 1991, p. 85). To help them build confidence, try the following tool. Divide the class into small groups. Ask each member to share with the group a success they had in their lives before particular age periods (depending on the ages of the group - age 5, 10, 20 or older). They should be encouraged to share accomplishments from several ages. These need not be major events, but something which made themselves feel proud. When the classes are finished, a learning celebration could be planned. Instead of using the last class for a final exam, completion of forms, or a chance to fill in all the information not previously covered, use this time to discuss accomplishments, have refreshments or meet at a restaurant to celebrate.

Verduin, Miller and Greer (1986) stressed an important note for educators of adults. "They should give consideration to the nature of the adult learner and review the implications for designing learning experiences for their clientele. The unique differences of adults, with their diverse interests, needs, motivation, cycles, and physical and mental abilities, cause professionals in adult and continuing education to consider the differences in an effort to produce effective learning experiences" (p. 14-15). This puts responsibility on the adult educators.

When teaching adults, Westmeyer (1988) communicated a number of concepts which could be regarded for effective teaching of adults. All adult learners are different and some may not be beyond the adolescent stage, with them you may encounter and require discipline

problems. You may have to approach them as you would a high school class. However, most adult learners will be mature and their behaviors, attitudes and motivations will have to be treated differently from high school students, and should be, to warrant effective instruction. When teaching adults in situations where evaluations are required, you have both a motivation and a problem to deal with. Adults are motivated to perform well, however if failure occurs remediation and/or counseling of that student may be necessary. Adult students should be "figured out", meaning that you will have a large range of students in an adult class. They may be highly motivated, high achievers, poorly qualified and/or completing the class to get a job. If you have such a range, individualization in work will be dictated. Always remember you may have the majority of your students who are just as skilled as you are. Be humble and confident at the same time when working with them.

Despite the differences, "human brains do operate in the same basic mode, particularly after the formal operational stage has been reached" (Westmeyer, 1988, p. 27). Westmeyer (1988) gives a summary of the nature of the adult learners. They are independent and want to feel responsible for their own decisions, however some may regress to earlier years and want the professor to teach them. Each adult life has different experiences and may need individualizing of instruction to fit their learning. Also, the learners often have experience which enable them to assist one another, therefore group work is an instructional technique which can be used. The classroom climate is very important within an adult learning situation. The instructor should ensure that there is mutual respect, mutual trust, supportiveness, openness, authenticity and pleasure. The students should feel comfortable enough to speak and ask questions. The instructor does not need to entertain, but allow the learners to make decisions and feel that the

class is theirs.

When teaching adults, the developmental stages and life tasks should be given an high priority when preparing for the classes. The students will probably want the instructor to be specific about what is required from them. An instructor may want to state their class goals in terms of what students will be expected to know, do and with what level of competency. The student should be told at the beginning of the course exactly what the requirements are and the procedures to be followed. Adults are basically well motived, whether extrinsically, such as skills, timing, rewards or grades, or intrinsically, such as pleasing others, power, self-gratification and self-esteem (Westmeyer, 1988).

According to Glickman, Gordon, Ross-Gordon (1998), Stephen Brookfield suggested six central principles of effective exercise in adult learners. Participation in adult learning is voluntary, consequently coercion has no place in their learning. Respect among the participants for each other will be an effective tool. Collaboration is needed when sharing responsibility for setting objectives and evaluating learning. Instructors and students should collaboratively be involved in the activities and reflection of the activities. Good facilitation will lead the adult learner into a spirit of critical reflection of their personal, occupational and political lives. The aim of adult learning is the "nurturing of self-directed, empowered adults who will function as proactive individuals" (Glickman, Gordon, Ross-Gordon, 1998, p. 56).

Westmeyer (1988) cautioned against viewing all older learners as alike. As with children, there may be a large variety of differences within older learners. There are certain negatives which may arise from age and experience. They may lack self-confidence, they may have fear of the education setting (I'm too old to learn), some may have closed minds based on limited

experiences, others may be nervous of the competition in formal classes and are apprehensive of learned professors. The older learner can be easily discouraged and would rather give up than have to possibly face failure later.

The future of adult education should be addressed to further ensure that the needs of the learners are met. It is certain that this field of education will continue. With new knowledge, technological changes and social changes, adults will probably have to train and retrain several times throughout their lives. Secondly, adults have a greater need for personal fulfillment following employment and work and may be interested in education for differenet reasons, such as recreation, and self-enhancement. A better legitimacy will be given to the entire field as more and more adults become involved in the process and experience of adult education.

Verduin et al. (1986), concluded, "perhaps what the future holds for the education of adults is the true concept of lifelong learning, a continuous learning process and opportunity throughout life" (p. 118). Our society should provide learning opportunities throughout a persons life when problems, concerns or interests occur.

Teaching Strategies and Techniques

Researchers, theorists and teachers have developed a large group of teaching strategies and techniques to use with learners. Many of which can be used with students of varying ages. This section of the paper will deal with a variety of techniques to be used with students. It is important to remember, as advised by Westmeyer (1988), that adult learners are not just older children. When deciding on teaching styles an instructor must be definite that all characteristics and stages of the learner are considered. Many approaches can be used with all ages of learners, however they may need to be adjusted to accommodate the particular group of students.

Using Multiple Intelligences in Teaching Strategies

As discussed in Paper #2: Learning Styles/Teaching Strategies: Bringing them together for Optimal Learning, a recent, predominant teaching strategy was developed from the notion put forth by Howard Gardner. Gardner "challenges the traditional conception of intelligence as a global overall ability. Bringing together earlier research on adults and children, Gardner posited that there are a number of different types of intelligences" (Glickman, Gordon & Ross-Gordon, 1998, p. 52). Traditionally, educators and researchers have measured linguistic intelligence and logical-mathematical intelligence. However, Gardner has communicated that six other intelligence exist; musical, spacial, bodily-kinesthetic, intrapersonal, interpersonal and naturalist. Acknowledging these intelligences will help instructors identify the intelligences of the students and utilize the knowledge in selecting content and teaching strategies to use. This paper will discuss how to use the theory of Multiple Intelligences when deciding upon teaching strategies.

Using the concept of Multiple Intelligences, teachers can create their lessons to reflect the various learners. Firstly, many teachers use Multiple Intelligences as a means to arrange lesson plans. Students may often have trouble understanding concepts with paper and pencil. They more easily grasp concepts when they build models or role play (Campbell, 1997). A teacher may also set-up eight different learning stations to ensure that the students engage in all of the eight intelligences. This appeared to be overwhelming at first, however "teachers report that thinking in multiple modes quickly becomes second nature" (Campbell, 1997, p. 15). Teachers should begin by reflecting on a concept to teach and identify the intelligences that seem most appropriate to teach the concept. Teachers can also ask students how they like to learn, and ask the students to use their favorite strategy for homework. In this way, all students confront their weaknesses and

engage their strengths (Campbell, 1997). Teachers should remember that they might not be able to use all eight intelligence at all times. Use the methods appropriate for the content and for the learners. Teaming up with other teachers can increase your comfort with all intelligence and allow students to increase their educational options. This could possibly work well at the college level, where many teachers are specialist in a particular area. Using this method would not only allow each student to find a comfort zone, but also the teacher. Each teacher would plan and teach in their own intelligence strength. Students rotate from teacher to teacher to do a unit of study. "When interviewed, students have said they appreciate the hands-on nature of their learning and each teacher's enthusiasm" (Campbell, 1997, p. 16). Teaching in ones own comfort zone would likely increase the teachers excitement for that subject area.

Secondly, interdisciplinary curriculum is often already in most schools and the proper arrangements and additions to them will provide the compliment for a Multiple Intelligent curriculum. Educators just need to highlight various intelligence by adding more arts programs, learning stations or bringing in community experts. Some teachers have capitalized on Multiple Intelligence by coordinating schoolwide interdisciplinary units. However, Campbell (1997) stated that Gardner reminded us that core disciplines must continue and "before thinking in interdisciplinary terms, we must first possess the knowledge of the individual disciplines" (p. 16). A Multiple Intelligences curriculum should not replace the core curriculum of a school, however it can be used to enhance what is presently being taught.

One example of using this theory with an interdisciplinary approach was "Seattle's International focus" which piloted a schoolwide Multiple Intelligence week (Campbell, 1997). It dealt with international awareness. Literature teachers introduced short stories from different

cultures, business teachers focused on trade issues, math teachers focused on lessons on foreign stock exchanges, social studies teachers compared different government forms and civil rights in different areas, physical education teachers taught games from around the world, health teachers discussed infectious diseases, art and music teachers engaged in various media and science teachers looked at local and global environmental issues.

Thirdly, Multiple Intelligence theory is used to promote self-directed learning. "They prepare students for their adult lives by teaching them how to initiate and manage complex problems" (Campbell, 1997, p. 17). Students may ask researchable questions, identify and use a variety of resources, to initiate and implement solutions which draws on a number of intelligences.

Primary students may design and build bird houses then decide whether the houses meet the needs of the birds and what changes should be made. Middle school students can solve a mock crime; conduct investigations, gather evidence, suggest a solution, then analyze the problem-solving used. High school students may suggest their own topics such as redeveloping an area in the city or some medical research.

These projects may take 2 weeks to a month to complete. Guidelines should be given to the students. The following guidelines have been used;

- State your goal
- Put your goal in the form of a question
- List at least three sources of information you will use
- Describe the steps you will use to achieve your goal
- List at least 5 main concepts or ideas you want to research
- List at lest three methods you will use to present your project

- Organize the project into a time line
- Decide how you will evaluate your project

Fourthly, when assessing work, Campbell (1997) stated that educators should encourage students to "demonstrate their higher-order thinking skills, generalize what they learn, provide examples, connect the content to their personal experiences, and apply their knowledge to new situations" (p. 18). Students may be given the option to decide on their evaluation, use portfolio format, or work in groups to evaluate each others work.

Gardner expounded that "we need to develop assessments that are much more representative of what human beings are going to have to do to survive in this society" (Checkley, 1997, p. 12). Teachers should not evaluate on only short-answer tests. Rather decide if it is a linguistic, logical, aesthetic or social performance and allow students to show their understanding in a variety of ways.

Silver, Strong and Perini (1997) expressed that in assessing, teachers should devise standards which include the following two questions; "Does it help us develop every student's capacity to learn what we believe all student's need to know? Does it help each student discover and develop his or her unique abilities and interests?" (p. 27). This would exhibit the use of Multiple Intelligences.

Fifthly, Campbell discussed the use of apprenticeships. Apprenticeships will not track students into careers, "instead, they would contribute to a well-rounded liberal arts education and consume approximately one-third of a students' schooling experience" (Campbell, 1997, p. 19). Students should participate in three areas; one in the art or craft form, one in the academic area and one in a physical discipline. Students can complete apprenticeships throughout their

education. In doing so, they learn that "one gains mastery of a valued skill gradually" (Campbell, 1997, p. 19). Apprenticeships work well at a variety of educational levels. Instructors, in a variety of fields, would allow their students to gain valuable experience when using this technique.

There are several examples of schools which have successfully adopted and implemented Multiple Intelligences. At Key School in Indianapolis, teachers, parents and community members mentored students in 17 different areas called pods. Students attended a pod of their choice 4 times a week. Children, of various ages, worked together because each pod was open to all students in the school. It included; cooking, gardening, singing, city planning, young astronauts, shipbuilding, journalism, animation or weather monitoring. This offered great opportunities and "when they are immersed in real-world tasks, students begin to see where their efforts may lead" (Campbell, 1997, p. 19). Students noted the benefits of completing real-life work.

An algebra class can learn graphing equations kinesthetically. Mountlake Terrace High School in Edmonds, Washington, headed for the schools courtyard during math. Reeder, the math teacher, "maintains that when her students physically pretend to be graphs, they learn more about equations in a single class session than they do in a month of textbook study" (Campbell, 1997, p. 14). The class identified the X and Y coordinates on the lines on the pavement and plotted themselves as points.

A final example, was the Tulalip Indian Reservation in Marysville, Washington. The students learned about photosynthesis by rotating through learning stations. They acted out the process at one station, read about it in another, sang, charted, and finally discussed and reflected on the events that transform the life cycle of plants (Campbell, 1997).

Using other Teaching Techniques

Jerold Apps (1991), in *Mastering the Teaching of Adults*, dedicated much of the book to explaining teaching tools for instructors of adult students. As mentioned previously, many of these techniques can be used at a variety of educational levels.

The lecture is a teaching method which continues to be a debated method. Apps (1991) explained that there is a place for lecturing within the teaching environment. Despite the arguments against it Apps (1991) stated that "lecturing continues to be one of the most efficient and effective, however lectures must be done well"(p. 46). The following tips were added to help while lecturing: it should be no longer than 30 minutes, do not include more than 4 or 5 major, summarized points, ensure your voice is audible, strengthen the lecture with visuals and ensure that everyone can see them, use stories to help explain your points, keep language simple and concrete, keep eye contact, allow time to take notes, allow time for questions, provide handouts of the main points, do not read, do not talk too fast, slow or monotone, and be enthusiastic in what you are saying.

An interview with a guest speaker is another technique to be used. Both the instructor and the class may participate in the interview to note that the person gives you the information you and your class are looking for. To prepare for the interview, Apps (1991) explained that one should carefully select the resource person that knows the subject well enough to add to the class. The instructor should meet the person before class time to discuss what is being done, some possible questions to be answered and to suggest that brief answers are fine.

A field trip, although needing considerable planning, is an excellent tool for adding to your class and will add to what you are teaching. Apps (1991) explained that you should visit the site

beforehand and explain what you want the class to see, pay attention to details such as transportation, any physical disabilities, and meals, explain to the students what they should be watching for on the trip, be prepared for the unexpected, avoid unplanned trips which will not cover any objectives you are teaching in the classroom, and add to the trip as being a learning experience by discussing what happened and analyzing the experience upon returning to class.

Print materials are good tools for instructors to use. Provide the readings. Let the students know when it should be read and supply a bibliography of additional readings. When using print materials, Apps (1991) expressed the need to remember copyright laws, assign only one textbook, be clear about the materials expected to be read, encourage learners to keep a journal of their responses to the readings, be sure the readings are relevant, and distribute the readings during classtime and allow students time to organize the materials. An instructor should also not expect too much reading from adults, remember they have life and responsibilities outside of school.

Result demonstrations of how the new information can be put into practice is always a good idea. Finding someone within the career willing to allow students to watch how the teaching topic can be applied, would be a benefit. Periodically, the students could visit and access this human resource. When using demonstrations, Apps (1991) recognized that the cooperators should be carefully chosen, have a follow through, explain the purpose of the experience, visit the demonstration site yourself, select times carefully for student visits and capture the information on videotape for future use. An instructor should avoid using a demonstration which has not been evaluated and check that the subject matter is suited to the work being covered.

Computer programs are increasingly becoming a part of much training and the workplace,

using them in the classroom would be to the benefit of the student. Apps (1991) referred to them as being a "powerful tool both to help the teacher and to enhance participant learning" (p. 51). To help to make students comfortable, the instructor ought to be an active participant in the process. To help in increasing success be sure the learners know how to use the computers, be available to help with any problems, be aware that now all learners interact with computers in the same way, and allow all learners time to learn the program (some may need to repeat the process to comprehend). Avoid being negative to those who need extra help, watch the participants closely and encourage the students to work in groups (Apps, 1991).

Skills demonstration is similar to the result demonstration. However, a skill demonstration normally gives a one-shot explanation. The student does not need to follow-up with another class. After the initial demonstration the student can attempt the skill being taught. Before using a skill demonstration, Apps (1991) provided the following tips for instructors. Be sure to practice before class, have a finished product to show, have all materials ready to use, ensure that all students can see and hear what you are doing, explain each step, repeat steps if necessary, allow time for questions, and if possible provide written steps for the students. Make sure you do not move to quickly through the steps, do not assume that some steps are easily understood, do not dismiss any questions and because you have mastered the skills do not assume a superior attitude.

In combination with the skills demonstration, a learner needs hands-on supervision. A time to practice the skills they have previously viewed. When this occurs in your classroom, remember to provide for additional help, be patient with mistakes, be sure to provide for safety, demonstrate again if necessary, keep in mind the left-handed versus right handed issues, allow for

unobserved practice and encourage group work. Realize that some people may need more than one attempt, do not make discouraging comments, do not embarrass students in front of peers and remember, do not lose patience (Apps, 1991).

Similar to the apprenticeships, discussed by Campbell (1997), an internship is very useful with students who are entering a career with no experience from that career. Often, an internship will include time observing and time working in the career. Often, students describe their internship as a very valuable experience. When planning and conducting an internship, the instructor should recognize the following tips: Plan extensively with the on-site supervisor, lay out what is expected to be learned during the internship, plan meetings to discuss progress, complete an orientation of the setting for the internship, hold meetings where a variety of interns can get together to discuss their experiences, encourage the keeping of a daily journal, and ask the intern to write a summary of the experience of what is learned. Avoid a setting where the supervision is not adequate, ensure that there are a variety of tasks to be completed during the internship and guarantee that there is enough preparation of what to expect while at the workplace (Apps, 1991).

Apps (1991) expressed that "when it is difficult to do the real things, because of time, money, or other reasons, a case study can be a reasonable alternative" (p. 55). Give the students a problem and allow them time to analyze and solve it. Keep in mind the following points. Existing case studies of actual experiences should be used, newspapers and magazines sometimes have studies to use, present facts that are realistic, create stories that represent situations which are a part of the participants life, explain that a careful analysis must be executed and discussed, provide questions to guide the participants to solutions, give time to work out answers, and lead

them in the case study process. Do not have the cases to long or complicated, do not lead them to solutions without explaining the importance of the process and do not leave the idea that there is only one right answer (Apps, 1991).

Apps (1991) explains a variety of teaching tools to help students create a deeper understanding of concepts: forum, quiet meeting, diad and triad, buzz group, group discussion, simulation game, role playing, group project, seminar, simulated TV show, questioning, consciousness raising, searching for assumptions, and debate. To develop tools for offering multiple perspective, Apps also explains the use of panels, guest speakers, drawing and 3-D creation (1991).

Apps (1991) continues by discussing a variety of techniques which allowed for class participation. A forum is when a resource person is given the opportunity to present and then participation of the group is encouraged through interaction with the resource person. The participants are prompted to give their own opinion, raise questions and to challenge what the resource person states, in a collegial manner. A quiet meeting remains quiet while everyone is given the opportunity to express their own opinions, experiences or feelings. Each person shares ideas on a topic, others share their ideas, but the key is to ensure that no-one reacts to what another person has stated. It encourages just the sharing of information and the listening to others sharing of information. A diad and traid functions will with a large group. After a lecture or presentation, the group divides into groups of two or three. They are assigned a question or note from the presentation and asked to respond to it. A reporter from each group presents the responses to the entire group. A buzz group is similar to a diad or traid, however it consists of small groups of five or six people. Again, a reporter and presenter is needed. To prepare a class

for group discussion, they should have knowledge of the topic to be discussed through a previous class or assigned readings. The group may be more interactive if they are seated in a circle and individual names spoken. Games and role playing can be used to simulate real life situations. A problem presented and as it progresses new information added to find the solution. Group projects work well with a class who gets to meet over a period of time. The students can be given a project of gathering information, building or designing something and presenting it to the class. Much class time can be spent with students being responsible for a class.

Westmeyer (1988) discusses teaching techniques in terms of presentation modes. Presentations, to the adult student, can be grouped as instructor-centered, learner-centered, and material or content-centered. To help sustain interest, an instructor should use a variety of these modes. Learners ought to be given new information which they can link to prior experience. Adult learners want to be involved, therefore lecturing can be used to provide information, but class discussion will evolve, so plan for it. Providing the proper questions will aid to bring the discussion to the conclusion the instructor is planning. Accordingly, questions ought to include open questions, leading or follow-up questions, questions of closure and spontaneous questions (Westmeyer, 1988). Other modes to use with adult learners would be workbooks, laboratory instruction, simulation of real life situations, role-playing, games, programed instruction, and computer assisted instruction. Each of these techniques may require more preparation from the instructor, but are quite effective. Often, an apprenticeship, internship or practicum, as in the school situation, are used with adults when complex skills are the desired outcomes.

Desmarais and Tripp (1993) discusses the use of teaching techniques to be used with a variety of different styles of learners. They studied the visual learner, the auditory learner, the

multi-sensory learner and the undisciplined learner. The visual learner is one who relied on the visual sense for a better understanding. Seeing and reading material, then associating it with a picture creates an understanding. The auditory learner relies on the auditory sense for a better understanding. Listening to oral presentations and recording and associating it with sounds creates an understanding. The multi-sensory learner used hearing, seeing, feeling and touching to understand. This variety of senses are used to gather and process information. The undisciplined learner tended to be negative and does not enjoy using any sense to help in the learning process. This student required immediate feedback and needs to be encouraged to think about the cause/effect relationship (p. 2).

The authors went on to discuss a number of techniques which may be useful to each type of learner. Visual illustration is a technique which uses charts, diagrams, pictures, and so on to enhance the presentation of material to the visual learner student. This type of presentation often helped all students, especially the visual learner (Desmarais & Tripp, 1993, p. 3). Mapping is a technique for diagraming vocabulary relationships in a semantic map, story maps or comparison/contrast map. This was helpful for a multi-sensory learner since it applies visual representation, listening, speaking and writing (Desmarais & Tripp, 1993, p. 9). Auditory/Oral activities referred to the use of your voice, and listening to other sound mediums to help the learner understand the material being presented. As with visual illustrations, this technique may be helpful to all types of learners, but especially focused on the auditory learner (Desmarais & Tripp, p. 25). Tactile illustration allowed the learner to use their hands to help in the learning process. They touch, move, and use manipulatives to aid in learning. A learner who is well coordinated would benefit from this method (Desmarais & Tripp, 1993, p. 30). The authors

concluded their handbook by stating, "everything attempted will not necessarily prove to be effective for all students. However, the key to success is to continue to adapt the processes until you see that they benefit the learners" (p. 31).

Using Study Skills in Teaching Techniques

Ormrod (1990), in *Human Learning*, examined techniques which deal with specific study skill problems. Again, these techniques can be used in simple, primary classes to remember the colors of the rainbow, to more complex college-level classes where the student must remember long list of demanding information or formulas. Mnemonics are "devices that facilitate the learning and recall of many such forms of difficult material" (p. 285). Four types of mnemonics are verbal mediation, visual imagery, superimposed meaningful structures, and external retrieval cues. Verbal mediation is where two words or ideas are associated by a word or phrase, a mediator, that connects them together. The mediator should bridge the gap between the two words. Examples could include; German word for glove is Handschuh. It may be remembered by thinking of a glove as a "shoe for the hand"; to remember the spelling of the word principal as "the principal is my pal" - the school administrator is a principal not a principle.

A visual image can be a powerful method to remember and store information. The method of Loci emphasizes the notion of relating the information to be retained to a particular location or place. When retrieving the information a person could go back to the place, in their mind, and visually see it. The pegword method consists of using a well-known list of items which serve as a series of ideas on which the new list is hung visually. Remember a well-known list, such as the numbers one to ten, and link it visually to the list of new items to be remembered. The keyword method combines a verbal mediation and visual images. Identify the familiar word and

the unfamiliar word, then visually link the two words with a visual image of it. For example, the German word "das Pferd" meaning horse in English. The keyword may be Ford. Think of a horse driving a Ford (Ormrod, 1990).

Superimposing is the overlaying of a familiar structure on the body of information to be learned. It may be a sentence, story, poem, acronym or anything else familiar to the learner. For example, ROY G BIV to represent the spectrum: red,orange, yellow, green, blue, indigo, violet. Another would be; "Every good boy does fine" - to remember the lines of the treble clef: E G B D F (Ormrod, 1990).

External retrieval cues are used to remember something, for example, forgetting to turn off the lights in your car or an important meeting. The string around the finger is a common external cue, however things like appointment books, to-do lists, and self-reminder lists in an area that you are sure you will see are more manageable (Ormrod, 1990).

Regardless of the instructing technique used, evaluation is often important in all levels of education. Westmeyer (1988) defined evaluation has "judging the achievement and/or performance of learners and presumably informing the learners of the outcome of the evaluation" (p. 132). In formal classes, where grades and credits are necessary, evaluation is essential. In less formal classes, the learners want to know "how they are doing." Also, an instructor should want to know whether or not an effective job is being done in teaching the students and may have to evaluate knowledge or skills. In diagnosing knowledge, three measurements may be used. First, ask the learner what they know by giving a broad essay question. Second, a more precise test would ask specific questions where the learner responds and shows what they know. Third, observation of the learner where they demonstrate their knowledge can be evaluated, rather then

written information. The evaluation of skills may involve different strategies than those used for evaluating knowledge. In measuring the skill of the learner the instructor should consider two things; the product of the skill and the procedure to be used in the skill. The only true evaluation of a skill would be to observe the leaner as they do whatever is expected and evaluate both the process and the product (Westmeyer, 1988). As with teaching strategies, a large variety of evaluation methods could be applied.

The Younger Learner and the Older Learner Collaboratively

Cocklin and Walther (1996) completed a joint study of adult students who returned to the traditional high school alongside the regular high school students. In their study they observed and interviewed students both in Canada and New Zealand. For the most part the return to such a situation was positive for all involved. The integration into the classroom setting allowed the adult student to become a comfortable student. They felt accepted by their peers and teachers and reported "greater satisfaction from the mixing of ages at school than the more adult-only context. Here, phases such as "fun," "new ideas," "enthusiasm of youth," and "greater variety of ideas" were expressed (Cocklin & Walther, 1996, p. 43). Adult students also felt that the regular high school was beneficial because the teachers were more available, and there was a greater opportunity for discussing work with others.

Insights as to why these students returned to high school were provided by Polson (1996). Reasons such as the need for credentials for occupational changes, wanting the qualifications to be able to complete further study, wanting to improve their own self-image, or how others saw them, were noted by a variety of students (Polson, 1996).

Adult students desires only the same treatment and same classroom participation with their

teacher as the teenaged student experience. However, Cocklin and Walther (1996) advises against the notion that these students are the same as the teenage student and it "cannot be overlooked, for there remains the extent to which they are different from their teenage peers" (p. 45). The process of differentiation, establishing different roles, rights, obligations, treatments, expectations, intentions and actions, were needed to help lessen the dissimilarities of the students should be amply provided for. Most teachers and other students recognized the differences and realized that special circumstances applied to them, as noted in school policies and procedures. Another noted difference was the need for the adults to have a different commonroom. They desired the need to "get away" with students their own age and discuss issues relating to adult life, which would not be possible with their younger classmates (Cocklin & Walther, 1996).

Fifteen recommendations were generated by Cocklin and Walther (1996) for policies and practices of the adult student in the high school setting.

- Advertising of the availability and benefits of the student returning to the school should be done.
- Encouragement of the multiplicity of the outcomes can also be derived.
- Let the adult student know that they will be part of the class, but their individuality and maturity will be acknowledged.
- Career and personal counseling services are provided for them.
- Effective communication of information should be regarded.
- Their individual abilities should be identified and noted when determining classes.
- The adults will probably need consultations with administrators and teachers, therefore time should be provided for these meetings.

- Time and thought must be given to the age criteria and internalization process.
- Policies for the adult student should exercise flexibility.
- Regularity of the in school time-table would help an adult arrange for classes they need to attend.
- Financial assistance may be needed for the adult to endeavor to return to studies.
- They will need their own space, so an adult commonroom should be provided.
- Child care facilities would make it easier for some of the adults to return to school.
- The opinion that an adult returning to school is strange must be changed to one of it being lifelong learning for the student of any age.
- Finally, the authors feel that further research be completed in this area.

Conclusion

Commons, Trudeau, Stein, Richards and Krause (1998) completed a study to show that the hierarchical complexity of tasks present that developmental stages exist. The study "offers clarity and consistency to the field of stage theory and to the study of human development in general" (p. 261). Even though these stages exist, it is possible for learners of all ages to co-exist successfully within an educational institution with common instructors. However, research has shown that the differences between and within the learner warrant a large amount of work on the part of all involved in such a process. Instructors and teachers should be aware of the developmental stages of all who will be affected. The younger student and the adult student have very different life stages and life roles which greatly effect their learning styles and capabilities. If one is to encounter this situation, one ought to be prepared to deal with the many differences

within the students. These differences may be positive or negative depending on how they are viewed within a collaborative effort of the various levels of the educational system.

A CONCLUSION TO THE PAPER FOLIO

Partnerships in Education: Secondary / Post-Secondary Collaboration

The introduction to this paper folio discussed how the educational systems in Newfoundland had been under financial restraint for a number of years. This problem was not one which is expected to be resolved quickly. The idea of bringing together the systems, Elementary, Secondary and Post-Secondary, in a collaborative effort was put forth. Each paper within this folio discussed a different aspect of the possible partnership: Paper #1 discussed types of secondary / post-secondary partnerships in existence; Paper #2 addressed learning styles of students and teaching strategies; Paper #3 examined developmental stages of students and teaching techniques to use. Individually, these papers deliberated issues to be considered when working with students; Physical layout, how students learn differently and the stages of a persons development. Together the papers reviewed the suggestion of bringing together the younger and older learner in a conjoint endeavour.

In Partnerships between Secondary and Post-Secondary Institutions, I have concluded that it may be a great idea for high schools and post-secondary institutions to participate in collaboration. However, in the process of providing "more" to the schools and in turn the student a number of issues, which may will arise due to this effort, should be remembered. First of all, it should be remembered who is to benefit from this process - the students. In both institutions the students will be greatly affected by these types of changes in their schools. If the combining of the systems are successful, in terms of physical changes, does this mean that the students will be successful? Careful review of the collaborative effort should be conducted.

Also, recognized in this paper was the understanding that no project of this magnitude can

be successful without financial help and commitment to begin and maintain the program. There needs to be a strong commitment to the process before it begins even the initial stages. Where will this help come from within our current time of fiscal restraint?

When an educational change is involved, such as collaboration between secondary and post-secondary institutions, any decisions made are based on their present understanding of what should be. For change to occur there must be an allowance of time for the process itself and an allowance for unforseen possibilities which will occur. Will this time be given to all stakeholders involved - students, teachers, instructors and administrators? Who will do the training and in-servicing of the new system?

Learning Styles / Teaching Strategies: Bringing them together for Optimal Learning explored the varying learning styles of learners. Both the adult and high school learner should be encouraged to recognize and develop their own particular learning style. Generally, students regardless of age, elementary school-age, high school-age or adult-age, will learn more efficiently if they are given the possibility of learning within their "comfortable zone." For optimal learning to occur, one ought to be given the opportunity to operate within their style. At the same time, there should be enough flexibility given to learners to develop other styles. Instructors need also to acknowledge that a variety of learners require a variety of teaching styles. Therefore, effort should be made, at all teaching levels, to encourage that a variety of techniques and strategies are used when presenting information to, and gathering information from learners. Is it possible to bring together these differences in the combined education system? Regardless of age, students learn diversely, therefore the variety may exist at all levels. This may lead to the possibility of different age learners peer-teaching each other.

Developmental Stages/Teaching Techniques and the Learning Process evaluated the distinct stages of a persons development. Often, the developmental stages are linked to the age of a person. If the unfolding of a persons development is related to age, can students with such a wide range of age learn together? Research has shown that the differences between and within the learner warrant a large amount of work on the part of all involved in the process. Instructors and teachers should be aware of the developmental stages of all who will be affected. The younger student and the adult student have very different life stages and life roles which greatly effect their learning styles and capabilities. These differences may be positive or negative depending on how they are viewed within a collaborative effort of the various levels of the educational system.

The notion of collaboration is not a simple solution to a financial problem. Many obstacles and issues would have to be confronted before any such effort would be feasible. It is important to remember that in a time of change the student must not be forgotten. Even though there are obstacles to overcome, the education system in Newfoundland and Labrador is facing restructuring. Partnerships could be a very viable and successful response. Literature presented that "no level of education is an island any longer" - working together can bring about very positive results. Those of developing life-long learners for our society.

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