

**OFFICE TECHNOLOGY:
BRIDGING TO THE FUTURE**

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Bridging to the Future
Office Technology Certificate: Program Evolution

PROJECT PROPOSAL

In this project, I will show the ways in which the Office Technology Program at Medicine Hat College is evolving in response to the sweeping economic changes and rapid technological advances which have altered the nature of work itself. We have tried to maintain a balance between the needs of students and the needs of business and industry. As we progress through the last decade in the 20th Century, we are acutely aware of the challenges that lie ahead of us in fulfilling our mandate to prepare our graduates to take their places in the information society of the 21st Century.

My research for this paper has coalesced around the areas of the changing nature of work in a technologically driven society and research into teaching/learning theories and strategies. I wanted to learn more about the nature of knowledge, the nature of teaching and the nature of the learner, specifically the adult learner. I found it difficult to call a halt to the reading once I began. In addition, I have obtained the majority of the provincial and federal government white papers since 1989 on the topics of science and technology, preparing for the next century, and the role of the post-secondary institution in a restructured economy. With this information in mind, I have been involved in changing the office technology program to meet the demands of the workplace.

As an instructor in a business certificate program, my job is to provide my students with the opportunity to learn the skills, values and attitudes required by employers. In the past five years, we have been bombarded through government, business and industry, and the media with imperatives on the necessity of meeting

the challenges of the global marketplace, international competition, and increased productivity within the restraints of a growing government deficits and debt. The move from the industrial to the information society is accompanied by culture building on a grand scale. Virtually all print and electronic communication media touts "the message," a message reinforced by government and industry pronouncements.

In an environment of dwindling resources, we are told to *do more with less, and do it more efficiently and effectively*. Education is married to the interests of business and as the decade progresses we are witnessing a renewal of the vows and a commitment to strengthen the relationship. It is up to all of us to ensure that we establish the bridges which will lead to strong, vital partnerships with each other. There is a growing concern in post-secondary education that we are being asked to move beyond educating the whole person to a more narrowly defined role of educating the worker for the workplace. However, research does offer a glimmer of hope for those of us with a more humanistic view of education. The new society and the new workplace requires more than skills, it requires individuals who can think, learn and work together to create innovative and creative solutions to the problems they encounter.

LITERATURE REVIEW RATIONALE

The nature of work, the nature of government, and the nature of institutions are evolving to meet the challenges of the world economy. Responding to cuts in operating and capital grants, to changing employer expectations, to restructured jobs, and to increased competition from non-traditional educational institutions, post secondary education is realizing that, in order to survive, we must change our

programs and the way in which we deliver them. Social, economic, political and environmental conditions are forcing educators to re-think both the process and the product of the education system.

The "Commission on the Future of Community Colleges" defines the goal of colleges precisely:

At the center of building community there is teaching. Teaching is the heartbeat of the educational enterprise and, when it is successful, energy is pumped in the community, continuously renewing and revitalizing the institution. Therefore, excellence in teaching is the means by which the vitality of the college is extended and a network of intellectual enrichment and cultural understanding is built (Boyer, 1990 p60).

Colleges must give priority to programs that build bridges between teaching and practice. Such institutions would reward faculty who establish links with institutions beyond the campus, relate the intellectual life to contemporary problems and become centres of service to the communities that surround them (Boyer, 1990 p60-63).

What is the role of business education in today's increasingly competitive, global economy? Researchers differ in their interpretation. According to Valli the role of education, rather than placing a strict emphasis on the importance of learning proper dispositions and attitudes, should be to encourage students to develop as much skill and to obtain as much work knowledge as possible so that they will be able to protect their job boundaries, resist deskilling processes, and negotiate job enlargement or enrichment (Valli, 1986, p133). Education, in Parsons' view in (Valli, 1986), should prepare students for work by internalizing the qualities of responsibility, cooperativeness, respect, and good work-habits (Valli, 1986, p137). The American Vocational Association stresses the need for business and office education to equip individuals to function in the automated office of the

future, which means, not only competence in using new equipment, but the ability to work in new kinds of organizations (Bottoms, 1982, p14-15 in Valli, 1986, pp116). Others believe the trend toward office occupations will actually decrease rather than increase the need for skilled workers, since offices need only to become sufficiently large to make it worthwhile for management to rationalize (specialize, routinize, and mechanize) office labour processes (Braverman, Glenn and Feldberg in Valli, 1986, p93). The office of the future will require both high technology and "high touch" with more emphasis on customer service and the quality of service (Steenstra, Hogg, 1990, p189-90).

Dewey's (1904) theory of self-governance (learning to learn) consists of teaching a person to reason, make judgements, develop sustained arguments, and criticize the arguments of others, (Jackson, 1986, 5, 98-114). This theory is especially relevant in the prevalent culture-building environment. Equipping students with attitudes and emotions that predispose a person to use reason is the job facing educators today. A keen sense of curiosity, a high degree of intellectual honesty, confidence in one's ability to acquire knowledge, and a healthy degree of scepticism can bolster a student's strength and willingness to persevere in learning.

The view that preparation for work should be the only, or even the most important goal of education, and the development of a passive electorate that gains much of its knowledge from television, demand that schools provide a deeper understanding necessary for a self-governing citizenry. Students in the future will need different skills than students in the past in order to make informed judgements about complex issues and events. The future requires:

"people who can think for themselves, act independently and with others, render critical judgements, and contribute

constructively to many enterprises, and whose knowledge is wide-ranging and whose understanding runs deep. Success depends on the whole society coming to place a much higher value not just on schooling but on learning." (Carnegie Report, 1986)

I lean towards the humanist view and to a certain extent the critical theorist view of education, albeit in conflict with the anti-technological bent of the critical theorists (Shor, 1980). As an instructor of business education and computer courses, I am strongly tied to the technology. While I recognize the inherent dangers and abuses associated with a technological, production-oriented world, I still believe that an educated population can and will learn to use the technology humanely and judiciously.

Our job, as educators, is to assess students' needs, students' abilities to cope with change, students' (learners') agendas, and students' need to matter (Schlossberg, Lynch, Chickering, 1989); and, above all else, to prepare our students to live in a world that is characterized by rapid changes and dominated by a technology driven media (Welsh, 1986). The technological world evidenced by the rapid growth of multi-media technology including vcr, cable tv, computer games, music videos, is eroding our thought processes and our capacity for quiet reflection. At the college level, students are either recent school graduates or returning, mature student, each with different characteristics and needs. Recent high school graduates have grown up with the electronic media, part-time jobs, and an affluent, seductive youth culture (Welsh, 1986). Returning, mature student on the other hand are in either a career or family transition. (Schlossberg, Lynch, Chickering, 1989).

Office work is undergoing a revolution, a revolution in office productivity, communications processes and management roles (Steenstra, Hogg, 1990, p189-90). Certain subjects are associated with one teaching method or the other (C. P. Snow's

two cultures distinction between humanities and sciences). Some curricular programs are more one than the other as evidenced by the contrast between programs in the liberal arts (well-roundedness) and programs in vocational areas (marketable skills) (Jackson, 1986, 6, 115-145). School learning seems to exhibit minimal transfer to on-the-job settings. The necessary knowledge for success in one's first year on the job is not what is taught in school. Perhaps the most important contributor to on-the-job success is "tacit knowledge," what one needs to know in order to succeed in a given environment but that one is never explicitly taught and that might not even be verbalized (Stenberg, Wagner, 1989 p263).

Current trends in the work place mandate a change from a narrow focus on training students about work to a broader focus of educating the whole student. The very foundations of our education system are under scrutiny as we face the dilemma between education and training (Steenstra, Hogg, 1990, p189-90). Nowhere is this more true than in Alberta in 1994. As we have seen in the past few months, the very nature of how education is delivered is under scrutiny. Predictions about education and the future of work highlight the need to *revolutionize the delivery* method for educating workers. This view is based on the following observations:

1. *25 to 40 percent of office work* will be lost in the next decade
2. upper-level managers and professional work will be taken over by the next generation of super, artificially intelligent computers that can perform all but their most original, creative duties
3. low-level, less expensive personnel with the aid of an appropriately programmed computer will easily handle routine everyday problems
4. *vocational education or training in any specialized job-specific skills is becoming obsolete*

5. prepare students to be mobile, flexible, adaptable and versatile
6. *ability to learn* will be the premium skill of the future
7. *elimination of fixed programs of study leading to specific educational credentials*
8. skills and knowledge acquired would promote personal and interpersonal abilities of direct application in a community-based life of cooperative self-reliance
9. goal is to enable students to step directly into useful working roles in the community
10. integrate the school into the community and involve the community as an active learner in the education process
11. schools should place importance on encouraging entrepreneurial skills (Steenstra, Hogg, 1990)

Alberta Education is moving in this direction with its Career Technology

Studies curriculum for junior high and high school students.

Basic, portable, and career-specific skills, knowledge and attitudes will be delivered through "hands-on" applications, using technologies and resources available within the schools and community. Expanded delivery strategies will support more equitable access to the programs throughout the province. Alberta Education Curriculum Branch. Career and Technology Studies, Building for the Future. 91 11 13.

The Athabasca University Development Institute, has developed CELS (Centre for Enhanced Learning Services) after conducting four years of research and consultation at the national and international level. This research, conducted by a consortium of business and education representatives, considered the global challenge for the key issues of education and training, educational changes, industry training, educational investment, prohibitive costs, and global acquisition. Their findings addressed educational concerns, national comments, training concerns, national funding, business-education relationships, future challenges, and national initiatives. The product of the four year study is embodied in CELS, an

overarching project fed by a national network of education and industry, which will provide information services, data base systems, systems and course ware, acquisition and application.

Technology Issues

We are currently in a period of rapidly changing technology which has led to the globalization of business and industry. In 1986 Valli questioned the effect of technology on clerical workers, asking whether our labour force is becoming more skilled, more "middle class" or it is becoming deskilled and its labour intensified, so that even white-collar labour is becoming more like the rationalized labour found on the shop floor. As she predicted, increasing use of technology is permanently displacing and isolating workers while simultaneously devaluing, routinizing and intensifying their work (Valli, 1986, p7). In the process, the very nature of office work has been restructured which has broadened the base of skills required by workers.

The marriage of microtechnology to telecommunications or in other words, the evolution of the microcomputer from a tool to a medium, is leading to the production of new tools and new media capable of transmitting an extensive range of powerful messages to a very wide audience and is fundamental to an understanding of how future systems will affect people (Frude, 1991, 11, 195-214). So far the introduction of microtechnology into factories and offices has increased quality for many workers by reducing arduous and repetitive tasks, providing them with new skills, and greater control over production. The negative effects include fatigue and a variety of physical symptoms resulting from working with VDU's for

long hours and the replacement of skilled manual activities has left some workers "de-skilled," suffering from social isolation, detached from work--Zuboff (1988). The high-tech office worker seated at partitioned workstations, staring into screens of desktop terminals day in and day out can lead to a general malaise in which the worker, no longer able to see or touch work, work that is "lost behind the screen" may display maladaptive responses such as resistance to change and unbridled enthusiasm, passive responses such as indifference or resignation (Frude, 1991, 11, 195-214).

As the cost of microprocessors and memory components continue to fall, artificial intelligence will lead to more natural systems and as systems become more sophisticated users will require less skill. Systems are becoming more intelligent and more approachable. They incorporate extensive knowledge bases and social and teaching skills, offering a wide range of information in an attractive and entertaining way. They are well suited to large scale commercial exploitation and provide a wide range of information content and presentational styles including: tabloid newspaper; magazine; and, encyclopedia. Internet and other sophisticated networks offer high-speed information retrieval and knowledge processing. Enhanced by the skills of a creative copywriter, users of powerful resident databases can access a central library systems, massive electronic storehouses of literature, film, video, music, and ephemera conveniently indexed and cross-referenced (Frude, 1991, 11, 195-214). What skills will our students need to navigate these super "electronic highways"? The use of technology has always been part of the formal educational system in the form of books, chalkboards, duplicating machines, teaching systems, and managerial strategies. Some

researchers look upon the use of mechanical and electronic technologies as a radical departure from a humanistic vision of teaching and learning (Oettinger & Marks, 1969; Turkle, 1984 in Kearsley, Lynch, 1992, 50-60). It is critical to provide appropriate computer instruction to all students and important to develop an appreciation of how knowledge of computers will be of value to them in their careers (Campbell, 1992, 61-73); it is also critical to integrate computers across the curriculum in the program.

Technology Leadership

Some educational researchers have found that a cultural view of leadership is most useful in the domain of education and technology (Schein, 1985; Sergiovanni & Corbally, 1984) in that success of leaders is determined by their ability to articulate and influence cultural norms and values. Culture-building, a commitment to a set of beliefs and values, must occur at each level.

There are many potential benefits, for both students and teachers, of good technology leadership (Bosco, 1986; Kulik, Bangert & Williams, 1983; Niemiec & Walberg, 1987; Roblyer, 1988, in Kearsley, Lynch, 1992, 50-60). They include: improved academic achievement by students; improved student attention and reduced attrition; better vocational preparation of students; more efficient administrative operations; reduced teacher/staff burnout and turnover; more meaningful and interesting learning activities; students more in sync with the needs of most employers; introduce a new challenge to teacher/staff jobs. Poor technology leadership (Becker, 1992; Dwyer, Ringstaff & Sandholtz, 1990; Sheingold & Hadley, 1990, in Kearsley, Lynch, 1992 50-60) arises from: lack of

knowledge about how to use technology; lack of adequate time or funds to properly implement technology; use of technology for its own sake, rather than genuine need; unequal access, creating "have" and "have not" groups; poorly designed facilities resulting in limited access; poor instructional results resulting in negative attitudes; overt resistance on the part of potential users; especially important area is the ability to critically evaluate existing and new technology.

It is essential for educators to keep in mind, that the manner in which technology is implemented in the classroom is more important than any intrinsic characteristics of the technology. It is important to consider the social and philosophical implications (Bowers, 1988; Lynch, 1990), to think about possible side effects and the human impact of technology, and to weigh these consequences in decision making. Technology leadership at Medicine Hat College is academically driven, especially in the Business Department. Instructional technology leadership comes from instructors who have informally accepted responsibility for encouraging and supporting teachers, students, and staff. The advantage is that such leadership is driven by genuine conviction and first-hand experience; the disadvantage is that this kind of leadership can be very idiosyncratic and limited by the parochial interests of the particular individuals involved.

Committees, development groups, support groups, subject-centred teams, and associations may also play a leadership role (Kearsley, Lynch, 1992, 50-60). At Medicine Hat College, academic concerns involving computer technology, are represented at the administrative level through the Computer Steering Committee and at the department level through the Academic Computer-users Sub-committee.

Total Quality Management

Another concept which must be considered in educating business students is the "Total Quality Management" concept. In the past, Western attempts at TQM have been isolated attempts to impose quality circles, quality control departments or quality education into position within an organization (Cullen & Hollingum, 1987, in Goldman, 1993, p 29-47). We are now experiencing a snowball effect in the race for greater efficiency and effectiveness as business and indeed, government adopt the concepts of Japanese management.

TQM holds broad implications for global business communication due to the internationalization of Western and Japanese organizations as evidenced by multinational corporations, acquisitions, mergers, relocations, foreign subsidiaries, and maquiladoras. Organizational Weltanschauung is a composite of cultural and organizational presuppositions or core beliefs that underlie, guide, and structure business operations. TQC is an evolving composite of U.S. organizational innovations, Japanese re-inventions and adaptations and the operationalizing of Japanese cultural beliefs, attitudes, and values into production lines and overall corporate culture. TQC "total quality control" a term coined by Armand Feigenbaum (1983) was built upon a decentralized, participatory management philosophy characterized by an increase in upward communication, interdepartmental and inter-divisional communications, and company wide relationships geared toward continuous and immediate feedback. (Goldman, 1993, p29-47).

This movement, which is permeating organizations at every level, must be taken into account. Again, we are responsible for giving students the requisite skills for working and communicating in this type of organizational structure. As Goldman (1993) indicates in his article, symbiosis, horizontal communication, decision making on the line, and participatory management between work centres are the new reality in the work place. This style of management is equally true for office work as for plant work.

The enculturation of Western workers, is one of isolation, specialization and compartmentalization. The work place, characterized by a lack of worker mobility between organizations and locales, walls, barriers, and long distances between work stations which increases the need for verbal communication, is giving way to Japanese management techniques. Japanese TQC breeds generalists, not specialists and is characterized by: immediate communication and feedback systems (process orientation); symbiotic relationships which require that workers fill in for each other, offer assistance, and be available to attend quality problems; reciprocity, cooperative team work and close proxemics resulting in immediacy in nonverbal communications and feedback; Japanese preference for a multi-perspectival, configural, symbiotic perception of work and everyday life (Goldman, 1993). However, we must use common sense in adopting Japanese management practices. Cross-cultural studies show that Japan and Taiwan work on fewer problems, discuss fewer alternate solutions, and display differences in coherence and focus (Stigler and Perry, 1988). While there is much we can learn about efficiencies from TQM, we do not want to lose our creativity and problem-solving abilities in the process.

In the interests of efficiency and effectiveness, we are now attempting to address this fundamental difference between Western and Japanese management styles. Corporate America and by implication Corporate Canada, including our government, have heartily endorsed this view. We are now in the process of being bombarded with the need for changing our culture of work--our expectation, the way we do things, the very fabric of our work life. As a business education teacher I am finding this divisive, since I am uncomfortable with the enculturation process,

but I am responsible for preparing students to work in offices where, for the most part, the new view of business originates and is accepted as the complete truth.

NAIT implemented TQM in their Secretarial and Office Administration program in 1993. This was done in conjunction with their advisory board who reviewed and rated the importance of skills and competencies related to TQM as they should apply to graduates of the program. Skills related to quality awareness, management skills, customer focus, employee involvement, cost of quality and TQM in general were incorporated into the program. This program has been supported from the top down, an essential element in its success

TECHNOLOGY AND WORKPLACE SKILLS

Technological and economic changes are mandating changes in the way courses are structured and offered. We must be aware of the danger of adopting a strictly training orientation on behalf of economic efficiency. Vocational goals aimed at little more than adapting students to existing relations in production, perpetuated the myth that every job is a personally satisfying career when matched with a worker of suitable interest and ability. (See also, TABLE 1). If students believe the myth, school has legitimized the 'world-as-is', creating (for capital) a relatively non-problematic school-to-work transition, a fit between a new generation of workers and the needs of the labour market (Valli, 1986, p200). The myth is changing, the goal of adaptation to the workplace remains the same. The primary material conditions, structures or institutions which give rise to cultural orientations are those of work, education, family, peer-group and gender-relations (McRobbie, 1978; Willis, 1977; Hall and Jefferson, 1975; in Valli, 1986, p20).

Theory of Social Relations

According to the embourgeoisement theory of social relations, the shift from a production to a service economy increases the need for skilled workers; development and utilization of automated machinery increases the need for skilled workers. Schools must assist the economic sector in overcoming the shortage of skilled workers and the low levels of productivity this shortage creates. Conversely the proletarianization theory of social relations proposes the shift from a production to a service economy results in increasing use of automated machinery; thus, these changes have not increased the demand for skilled workers; therefore, the educational system is not called on to turn out highly skilled workers (Valli, 1986, p114).

Dewey (1938) believed that education is a social function, securing direction and development in the immature through their participation in the life of the group to which they belong. His basic tenets of traditional education are as follows: (1) the main purpose is to prepare for future responsibilities; (2) success in life is achieved through acquisition of organized bodies of information and prepared forms of skill; (3) textbooks are the chief repositories of the lore and wisdom of the past; and (4) teachers are the organs through which pupils are connected to material (Jackson, 1986, 5, 98-114). In a period of rapid change, who defines future roles and responsibilities, what knowledge is contained in today's textbooks which are electronically created at an ever increasing rate to reflect a technologically changing world, how is knowledge defined and who defines it as traditional bodies of knowledge continue to evolve and change?

Workplace Skills

Translated from goals to classroom practice, training can take the form of rote learning, drill and a type of pre-specified, closed, task-oriented curriculum which according to Blichfeldt (1976: 334-35), encourages submissiveness, a lack of ability to raise problems and a disability to work out solutions to new problems that may turn up. They discourage cooperation, open discussion, joint effort, and the testing of hypotheses, and tend to produce, in one union representative's words, "nice little secretaries who won't make waves." This is a role schools must forcefully reject since it removes curricular knowledge from the sphere of democratic discourse and shared understanding, reducing it to the application of technical rules and procedures. The result of this, combined with the fact that serious conflict is usually absent from the curriculum itself, is that instrumental ideologies replace ethical and political awareness and debate. (Apple and Weis, 1983: 6; Valli, 1986, p201).

Some Marxist philosophers (Althusser, 1971; Bowels and Gintes, 1976) emphasize the ideological dimension which says education reproduces the social relations of production by teaching people to be properly subordinate and rendering them sufficiently fragmented in consciousness to preclude them getting together to shape their own material existence. Explicit strategies can help students learn to acknowledge and handle conflict, to challenge assumptions about power and authority, and to develop problem-solving techniques that honour diversity, cultural values and perspectives. Phenomenologist and Marxists (Kuster, 1972, p2; Bills, 1981, p256; in Valli, 1986, p90) claim the process of deskilling, is the result of management decisions which seek to increase efficiency, control workers, and

lower the cost of labour through fragmentation, routinization and mechanization of the labour process.

Education for office work, rather than replicating the social world should help students perceive and analyze their surrounding and the conditions which create and perpetuate particular social arrangements (TABLE 2) Education should help them understand the possibilities and strategies for change, and prepare students to begin to recognize those aspects of work experience that are part of their taken-for-granted frame of reference, part of their common-sense stock of knowledge. Vocational education should encourage students to critically reflect on (interpret and reinterpret) their work experience (Simon and Weiss in Valli, 1986, p 200). Educational goals are, in many ways, in actual opposition to vocational goals (TABLE 1), an opposition created by an economic system whose accumulation of needs place value on "capital resources at the expense of human resources" (Grubb and Lazerson, 1975, p472).

As Giroux concludes,

Students must be given the opportunity to learn how to use and interpret their own experiences in a manner that reveals how the latter have been shaped and influenced by the dominant culture (Giroux, 1981, p123-4, in Valli, 1986, p200).

By discussing workplace issues (TABLE 3), by sharing problems, insights and ideas, students can begin to experience the potential of their collective strength. These instructional skills would serve to sharpen the students' skills in observing and articulating the nature of their work, legitimate their right to discuss job conditions, and illuminate the social rather than the individual power of knowledge (Willis in Valli, 1986, p208). Valli (1986) found that students were over skilled for the word processing, data entry jobs they tended to end up in. Only in those areas

least routinized and specialized were the students' degree or variety of skills utilized enough for them to like their work. In effect, only in those situations where more advanced typing, editing, word processing or data- and account-keeping skills were utilized, where students were rotated among various production functions or forced to balance a number of production functions simultaneously, or where they had extensive contact with the public, did the students find their jobs challenging.

In 1986, according to Valli, employers wanted trained workers, who would acquiesce to workplace demands. She contended that educated workers, those who have been taught to critically reflect on personal experience, are not always so willing to bend to productivity and efficiency demands (Valli, 1986, p209). Is this still the case? Since Valli's book was published, the work place has changed both in its organization and in its expectations of workers. Business and industry have flattened their organizational structures and eliminated supervisory mid-management positions. The direct result for workers has been to place more responsibility in their laps. This is in direct contradiction to the "routinization" of jobs that Valli found. Could it be globalization of the economy is inadvertently leading us down the garden path to a more humane workplace?

New technology, participative management, sophisticated statistical quality controls, customer service, just-in-time production--the workplace is changing and so are the skills that employees must have in order to change with it (Camevale, Gainer, Meltzer, 1990, p1). Recent diversification has expanded workplace skill requirements especially in the telecommunications and banking industries. A renewed focus on the customer and customer relations requires an ability to listen and articulate thoughts clearly, to understand and to be understood, and the

interpersonal and negotiation skills to deal with customer grievances and complaints. Changing economic and technical realities alter the institutional structures themselves (Carnevale, Gainer, Meltzer, 1990, p10). As business becomes highly decentralized, resources and authority become available to employees at lower levels thereby eliminating the middle layers of management and flattening the institutional hierarchy. Employers want a new kind of worker with a broad set of workplace skills, or at least a strong foundation in the basics that will facilitate learning on the job, a new kind of worker who will be expected to have a broad set of skills that were previously required only of supervisors and managers (Carnevale, Gainer, Meltzer, 1990, p4). Skills such as problem-solving, listening, negotiation, and knowing how to learn, as well as teamwork, self-esteem, leadership and motivation/goal setting, organizational effectiveness, employability/career development, oral and listening skills, and creative thinking are also viewed as essential (Carnevale, Gainer, Meltzer, 1990, p2). As full members of autonomous working teams these employees need higher levels of interpersonal, teamwork, negotiation, and organizational skills, skills that enhance group effectiveness. Each individual member of a working team needs leadership skills, to understand how his/her own personal goals and objectives fit into the organization's culture and strategic goals (Carnevale, Gainer, Meltzer, 1990, p11). Employees must know how to learn, know how to interact effectively with others, know how to listen and how to communicate their thoughts clearly, know how to influence others within the organization's culture, know how to assume a leadership role.(Carnevale, Gainer, Meltzer, 1990, p7).

In the next 20 years, the fastest growing areas of employment will require employees to have much higher mathematics, language and reasoning capabilities than currently is the norm (Hudson Institute, 1987). These new autonomous workers must have personal management skills to maintain self-esteem, set goals, and be motivated. Today's workplace demands, not only a good command of the three R's, but more. As the economy becomes more global in nature, workers are competing for jobs with workers in other countries (National Commission on Excellence in Education, 1983 in Prawat, 1989).

Knowledge skills including mathematics, sciences, history/geography, English, grammar and literature are the vehicles for gaining workplace skills. Foundations for business include basic skills, personal applications, career awareness and career development, the behavioural sciences, human relations and economics (McLean, Knapp, 1990). The basic skills, the traditional three "R's", encompass reading, writing, and calculating (including computer literacy) as a foundation for other learning including job training. Basic literacy includes the ability to cope with the needs and demands placed on individuals in the society (Worthington, 1985) including computer literacy, good written and oral communication skills (including listening) and math skills beyond basic arithmetic. Keyboarding, recordkeeping, and a good working knowledge of computers and a variety of software packages are a necessity for the office worker in the 90's (McLean, Knapp, 1990). Automation dictates future computer literacy is essential to business success, feeling comfortable about automation comes from school. Ease in learning makes it unnecessary to take a lot of school time to teach automation (Meanwell, Barrington, 1993).

Communications and interpersonal skills are essential to success on the job, particularly at the management level. The non-school environment is just as important as schooling in developing these skills. School can take a greater role by emphasizing oral presentations in class and working in student teams. Problem solving, thinking, and reasoning skills are essential in a world characterized by rapid and frequent changes in business environment. Communicating orally and listening intelligently are the communications skills most basic to individual and organizational success (Meanwell, Barrington, 1993). Workers who can express their ideas orally and who understand verbal instructions make fewer mistakes, adjust more easily to change, and more readily absorb new ideas than those who do not (The Productivity Paradox, 1988; in Carnevale, Gainer, Meltzer, 1990, p24-25).

Information-based technology is increasing the autonomy and value of employees at the point of production and service delivery. Employees roles have expanded. They are responsible for a wider range of products and the customization of an array of products for individual customers (Carnevale, Gainer, Meltzer, 1990, p8). Ettinger (1989) saw the economy moving in the direction of knowledge-oriented jobs which require individuals who can think and make decisions, are able to conceptualize, can analyze and resolve problems, are capable of implementing new ideas, can use good communication skills, who understand themselves and those they must work with, understand how groups work, how people think and why they interact and react the way they do, and have knowledge about learning and how it takes place (McLean, Knapp, 1990)

Students need to learn the components of an organization, the people, the technology, the economic structure; they must learn verbal and nonverbal

communication in interpersonal and group activities; they must take part in teamwork activities that give them the opportunity to make decisions and solve problems, both as individuals and as members of a group; they must learn personal and consumer economics at micro and macro levels; they must learn levels of employment including career entry, technical specialties, supervisory, management, entrepreneurship; and finally, they must learn the business functions of accounting, finance, industrial relations, information systems, management, marketing and distribution, operations management and production, risk management, transportation (McLean, Knapp, 1990). These things can be assisted through partnerships with business, classroom speakers from the business community, tours of the workplace, simulations, textbooks and practice sets, and by practicing interpersonal communication skills by performing information interviews in business and industry (McLean, Knapp, 1990; Meanwell, Barrington, 1993).

Technical changes on the job tend to change basic skill requirements incrementally. *The secretary is evolving into the information manager* and the bank teller is becoming the financial services portfolio consultant for individual customers. While technologies are eliminating jobs, they are also increasing the range of skills needed to perform jobs. Although the new job may not require the same depth of skill in each of the narrower jobs it absorbs, it does require a wider variety of basic skills than any one of the other jobs. The expanding range of job tasks and responsibilities demand higher levels of reading, writing, and computation (Carnevale, Gainer, Meltzer, 1990, p9; Hudson Institute, 1987). Attitudes and values, a work ethic, self-esteem, confidence and the desire to work and learn are gained through high standards, through being required to meet deadlines, through

being rewarded for "going the extra mile" and by learning that work is its own reward (Meanwell, Barrington, 1993). See TABLE 5. Learning to learn, creative thinking, problem-solving skills are required to adapt successfully to the job.

Workers with good basic skills find it easier to acquire more sophisticated skills that leverage better jobs and higher pay. Earnings are a function of the skills people have and the choices they make regarding how and where they use those skills. Compared with all other variables that affect earnings, learning on the job has the most powerful effect--30% increase of earnings (Carnevale, Gainer, Meltzer, 1990, p12). "Upskilling," as it is now called, is becoming more crucial as technical and economic changes increase companies' reliance on individuals and working teams (Carnevale, Gainer, Meltzer, 1990, p14). Efficient learning strategies for being able to distinguish between essential and nonessential information, to discern patterns of information, and to pinpoint actions necessary to improve job performance are essential (Carnevale, Gainer, Meltzer, 1990, p17).

An Alberta government survey, Senior Executives Perceptions of Graduates, tells a chilling tale. They feel that graduates' expectations are unrealistic. Many expect high pay for little work and are surprised at work standards. They deal with recent graduates who ignore the requirements of attendance and punctuality, thus exhibiting a deterioration in a sense of responsibility. Graduates who appear to lack respect for themselves and for others display a lack of respect for authority which some attribute to a lack of discipline in schools. Graduates who show no appreciation for what they can learn from someone with years of experience. They lack a sense purpose, ambition and motivation due to the perception that someone will take care of them (Meanwell, Barrington, 1993).

The quality of letters, memoranda, progress reports, work orders, requisitions, recommendations, and instructions is regarded as an indicator of the overall quality of an employee's work (Carnevale, Gainer, Meltzer, 1990, p21). Paul Delker, president of Strategic Educational Systems, flatly states that "automatic spelling typewriters require highly literate operators who need syntax and spelling more than ever" (Business Council for Effective Literacy, 1988b, p5; in Carnevale, Gainer, Meltzer, 1990, p20). Employers complained of computational skills deficiencies, particularly those evidenced by miscalculation of decimals and fractions, resulting in expensive production errors (Carnevale, Gainer, Meltzer, 1990, p23).

Meanwell, Barrington give the following suggestions for increasing students knowledge of the work world (Meanwell, Barrington, 1993).

1. the concept of incentives, merit pay and commissions should be taught as part of economics/business courses
2. a greater emphasis should be placed on the importance of time and working under pressure
3. regular tours of businesses and other work organizations should be conducted to give them an idea of the type of meaningful work being done, and how salaries are earned by contributing to the organization
4. rewards should be given for participating in programs like Junior Achievement

TEACHER/LEARNER/KNOWLEDGE THEORIES

Learner Characteristics

The four major theories in learning to learn are: Behaviourist, (B. F. Skinner); Structuralist, (Robert Mager); Functionalist, (David McClelland); and

Humanist, (C. R. Rogers). See TABLES 8 - 13 (Brostrom in Carnevale, Gainer, 1990, p44-45).

A predilection to the teaching/learning process is related, in part, to which of the four major learning theories we subscribe to. I believe behaviourist and structuralist orientations to learning mesh with the mechanistic life view of the industrial age. The functionalist and humanist orientations, on the other hand, are more in line with the requirements of the post-industrial, information age.

The learner as an individual, working cooperatively (democratically) with others, is a Dewey concept; the social aspect of education as a vehicle for fostering and creating change, conforms to Whitehead's (1929) teachings. Humanists and critical theorists (Bell & Schniedewind 1973, Shor 1980, Rogers 1961) are proponents of the views of Dewey (1938) and Whitehead. Humanist and critical theory is rooted in the teachings of Rousseau, Dewey and Whitehead. The democratists view, which encourages teachers to create a culture in classrooms that validates the need to struggle and an experience of expanded democracy, is reinforced in the Carnegie Report's (1986) statements on the kinds of teachers and teaching that must occur in order for education to meet the requirements of democracy (Lather, 1984, p.58, in Bell & Schniedewind, 1987).

Individuals exhibit an affinity for different learning preferences, which should be reflected in a variety of teaching/learning methods such as hands-on, written instructions, listening, demonstration, doing. Rae (1985) found that the method by which individuals prefer to learn may change at different stages of a person's life and career. Thus, by varying classroom learning environments and implementing such experiential instruction techniques and methods as on-the-job

simulations, small group activities, case studies, and decision-making discussions, instruction is designed to meet the preference needs of individual learners (Carnevale, Gainer, Meltzer, 1990).

Learning theory research shows that learning efficiency is affected by perceptual style preference for learning, sensory intake or perceptual style. Some people hear, some people see, some people feel, (American Society for Training and Development, 1988, in Carnevale, Gainer, Meltzer, 1990, p46). More adults are in the visual learner group than any of the other six groups defined by James and Galbraith (1985).see TABLE 1.

There seems to be a growing agreement that the keys to learning to learn more effectively are: (1) increased understanding of self as learner; (2) increased capacity for reflection and self-monitoring of the process as one goes about the tasks and activities directed toward learning (such as when note taking, meeting with a mentor, studying, locating community resources); and (3) more realistic understanding of the nature of knowledge (such as its structure, assumptions, limitations, validation processes). A variety of methods can be employed to foster these competencies: diagnosing learning style and feeding back the results to the individual; having people keep logs and journals as they learn; assigning retrospective reports after learning episodes have taken place; providing exercises to help people reflect on the purpose of the strategies they employ; conducting critiques to analyze the process dimension of such an activity group discussion; and making relevant theory inputs through lecture, assigned reading, and so forth (Carnevale, Gainer, Meltzer, 1990).

Goal orientation falls along a continuum from external to internal. Those who have a strong external orientation are performance motivated while those who have a strong internal goal orientation are learning motivated. Research done by Dweck and Legget (1988) shows that perceptions of intelligence can influence goal orientation. They postulate that students who believe that ability can be enhanced by hard work are apt to increase effort when faced with adversity. Students' perceptions of intelligence can be modified using feedback that suggests that ability

is modifiable, that increased effort enhances achievement, and that errors should not be viewed as failure but as part of the learning process.

Teacher Characteristics

Neo-progressive theory in Valli 1986 (Dewey, Goldhammer & Cogan) rejects a set model of good teaching and cause-and-effect relationships to predict learning outcomes while neo-traditionalist theory, (Hunter & Minton) espouses a means-oriented approach akin to the behaviourist. Critics of neo-traditionalism point out that the neo-traditionalist model is more mechanistic than intellectual, that it values teaching over learning and views the teacher as a technical decision maker rather than as an intelligent practitioner of a complex art. Fenstermacher and Soltis (1978) concur, stating that from the therapist philosophy of teaching (Rogers, Bibby, 1992), a philosophical view similar to that of the progressives, the teaching act is down played and student learning is stressed.

Some teacher behaviours can be attributed to what Leinhardt calls situated knowledge. Teachers drift towards routinization and consistency. Situated knowledge, which is contextually developed, is a form of expertise in which declarative knowledge is highly proceduralized and automatic, and in which a highly efficient collection of heuristics exist for the solution of specific problems of teaching. Expertise refers to working with speed, fluidity, flexibility and situational encoded informational schema. Expert teachers employ mental models that permit larger chunks of information about the entities with which they work (students, content, management, timing, etc.) and they have a large repertoire of behaviours. Situated knowledge connects teaching events with particular environmental features

such as classrooms, time of year, individual people, physical surroundings, specific pages of text, and more abstracted subject matter knowledge (Leinhardt, 1988. p 147-167).

Learners construct their own understanding. Knowledge is socially constructed and social interaction is necessary for children to learn (Vygotsky, 1978). Learning takes place when old knowledge structures are reconstructed into new knowledge through the reconciliation of conflicting perspectives. Teachers must get in touch with the informal knowledge and figure out how to connect it with new knowledge. Spider web or tinker toys with nodes and connectors are metaphors used for recent research stressing the importance of connections in developing networks of knowledge (Prawat in press) Some of the ways we can help students make these connections to reconcile formal with informal knowledge are to link key concepts and principles to physical representations, models, metaphors, and analogies; and to demonstrate how separate concepts and rules are interrelated (Skemp, 1978 relational understanding). Relationships are harder to learn but easier to remember.

Expert-novice research (Bereiter & Scardamalia, 1986; Gudmundsdottir & Schulman, 1987) supports the notion that experts are better problem solvers than novices, not because they have mastered a set of general thinking skills, but because they know more about certain things than novices (Chi, Feltovich, & Glaser, 1981). Experts make greater use of a few important ideas that can be used in a variety of contexts. Our ability to draw on previous knowledge in new situations is also very much influenced by how it is organized. A major source of the difference between experts and novices is the way the former are able to

organize their knowledge in a domain so that it can be used efficiently and effectively (Sterberg, 1981). Identifying and figuring out how to focus our instruction on "key ideas" is one of the major challenges confronting those who want to move toward a more conceptual approach to teaching (Prawat in press).

The status quo transmission view of teaching panders to the vested interest of students and teachers (Lockhead, 1985; Doyle, 1986; Cohen, 1986). This view holds that expertise in students may best be fostered when school curricula carefully attend to a network of central ideas or understandings derived from the disciplines. There is a clear relationship between what teachers know about content and the depth of understanding they are able to promote in their students. It is imperative that the teacher have the ability to focus on the big picture; to have a good grasp of what ideas are most central to the discipline and how they relate to one another. Understanding how particular ideas will be constructed by students, what sorts of preconceptions or misconceptions might have to be dealt with when introducing new material, which forms of representation are most useful for getting certain ideas across, and how students will respond to certain activities and subject matter material make up pedagogical content knowledge (Schulman, 1986). See TABLE 4 Teachers must possess knowledge about the key ideas in a subject matter domain, about which are the most important ideas for students to understand, and how can they best be organized and sequenced to maximize student understanding.

Knowledge Base Theory

Does a "knowledge base for teaching" exist? Is there a codified or codifiable aggregation of knowledge, skill, understanding and technology, of ethics

and disposition of collective responsibility as well as a means for representing and communicating it. The reports of the Holmes Group (1986) and the Carnegie Task Force (1986) rests on this belief (Schulman, 57(1), 1987). Schulman's exploration of a knowledge base for teaching is grounded in the research of eminent scholars (Dewey, 1904; Scheffler, 1965; Green 1971; Fenstermacher 1978; Smith 1980; Schwab 1983). The capacity to teach revolves around the following commonplaces of teaching, (paraphrased from Fenstermacher, 1986). A teacher knows something not understood by others. The teacher can transform understanding, performance skills or desired attitudes or values into pedagogical representations and actions. Teaching begins with the teachers' understanding of what is to be learned and how it is to be taught. It proceeds through a series of activities during which the students are provided specific instruction and opportunities for learning. The learning itself ultimately remains the responsibility of the students. Teaching ends with new comprehension by both the teacher and the student (Schulman, 57 1 1987).

Schulman categorizes the knowledge base as pedagogical content knowledge which includes: professional understanding; knowledge of learners and their characteristics; knowledge of educational contexts such as classroom, institution, communities and cultures; and knowledge of educational ends, purposes, and values and their philosophical and historical grounds (Schulman, 57(1), 1987). Teaching is both affective and normative; it is concerned with both means and ends. Processes of reasoning underlie both. Knowledge base must therefore deal with the purpose of education as well as the methods and the strategies of educating (Schulman,

57(1), 1987). Schulman's model for pedagogical reasoning and action is summarized in Table 4.

Grant's research complements that done by Schuman and others. Learning and understanding occur only as a result of students' active participation in classroom activities (Bromme, 1987 in Grant, 1988, p119). According to Grant, the translation of higher-order processing goals into instruction requires: a broad and deep knowledge of subject matter; viewing learning from a student work perspective; understanding the social context of reasoning tasks and its management demands; classroom mores that support intellectual risk-taking without diluting the task.

Grant (1988, p120), categorizes the teaching process as follows:

1. Teachers' knowledge consists of
 - a. pedagogical knowledge
 - i. subject matter
 - ii. pedagogy
 - b. knowledge of students
 - i. learner characteristics that influence learning
 - ii. where students will have difficulties
 - iii. what misunderstandings or previous learning they bring
 - iv. what motivates individuals and groups
 - c. knowledge of self
 - i. teacher beliefs about what good teaching is
 - ii. personal dispositions toward activities and interactions, principles and interests
2. Teachers' actions incorporate
 - a. instruction
 - i. narrative structures
 - ii. academic tasks
 - b. classroom organization and management
 - i. conventions
 - ii. configuration of classroom mores
3. Pedagogical content knowledge includes
 - a. understanding of nature of subject matter

- b. understanding of how one verifies or produces knowledge in that discipline
- c. cognitive processes important to understanding
 - i. writing
 - ii. reading
 - iii. problem-solving
- d. knowing how to communicate content to those less informed
- e. understanding appropriate activities and tasks that provide opportunities for learning these concepts
- f. repertoire of examples, metaphors, and analogies useful in communicating this content

Using what Grant calls meta imagery these three elements, teachers' knowledge, teachers' action and pedagogical content knowledge, are mediated through an organizing imagery that transforms knowledge into actions. Meta-image is used as a controlling conception for planning, implementing, and managing curriculum activities. It is a frame or way of looking at things and a process by which new understandings come into existence (Grant, 1988, p121). This selection of an effective organizing imagery, a single metaphor to present a complex process, is not easy.

Instruction involves one of two kinds of teacher actions, defining the teacher's content knowledge and transforming this understanding into student performance (Grant, 1988, p122). Strategies for classroom organization and management in teaching critical thinking include second teacher action and creating classroom environments that support intellectual risk-taking. Six strategies for teaching critical thinking are using writing to learn, discussing major topics thoroughly, interjecting humour to lighten otherwise serious work, responding supportively to student comments, ignoring incongruous student responses, and correcting erroneous thinking. Strategies which monitor and sustain participation in group activities include both classroom conventions and configurations of

classroom mores such as modelling effective performance, using peer support, distributing essay questions prior to testing, altering deadlines to allow adequate preparation, correcting inappropriate behaviour, providing immediate feedback, clarifying expectations for final products, soliciting student questions, providing individual assistance to students, sequencing a series of activities to move from the known to the unknown, using progress checks at key intervals in a major task, and phrasing questions to clarify thinking and build confidences (Grant, 1988, p123).

Teacher knowledge remains a missing component of research on teaching, as teachers have difficulty in discussing this knowledge Schulman (1986a). Teacher knowledge is missing from the language used by teachers in communicating the reasoning of their professional decisions and actions. We must foster the concept of teaching as cognitive work by introducing the components of teacher knowledge into our professional language (Grant, 1988, p123).

Social Nature of Teaching

Studies on the social nature of the learning process (Cobb, Yackel, & Wood, 1988, in press; Schoenfield, in press,; Steffe, 1988) emphasize the negotiation process, the interaction that occurs between teacher and student and between student and student, and reasoning together to solve problems. Negotiatory skills, structuring classroom discourse to promote knowledge organization and awareness in students are related to the depth of teachers subject matter knowledge (Carlsen, in press). The dialogic nature of conceptual learning is indicative of the importance of discourse processes in promoting conceptual understanding and higher-order thinking skills (Brophy, in press). While it is true that individuals

construct their own reality, it must be consistent with that shared by members of the disciplinary community if one is to participate in the discourse of that community. The tension between encouraging students to build on their informal ways of knowing and attempting to teach them the institutionally sanctioned form of knowledge gives rise to the paradox of teaching.

Overcoming obstacles, the misconceptions or faulty reasoning that interfere with students' knowledge acquisition, is a collaborative enterprise. The teacher guides students as they traverse new cognitive territory, pointing out, and working with them to overcome, potential obstacles to understanding. Not surprisingly, teachers who play the role of guide by pointing out obstacles to students, probing the limits of their understanding with difficult cases or entrapments (questions designed to snare students into agreeing with erroneous ideas), frequently are viewed by students as hinderers and not helpers in the learning process. Teachers will feel comfortable with this role only if they view uncertainty or conflict as an important growth-producing commodity. Teachers who embrace such a view are better at fostering a strategic, mastery-oriented approach to learning (Dweck & Bempechat, 1983).

An effective guide must have a good sense of direction. They know where instruction is heading (Lampert, 1988), in the global sense of a network of big ideas and the relationships among those ideas, and facts, and procedures. When teachers are knowledgeable about the subject they are teaching, they are able to generate a better set of questions to assess student understanding (Hasweh, 1985). Teachers beliefs about learning influence the degree to which they focus on student comments and behaviour. The most important general knowledge for teachers to

possess is that relating to the learning process. The teaching process can be improved by getting teachers to be more analytic during instruction: exposing them to constructivism, providing detailed information on students thinking, and encouraging experimentation and observation of different kinds of novel activities and curricular materials. Conjectures about students' thinking should be part of the lesson planning process. Knowing what sorts of concepts or understandings are likely to be troublesome for students is important data for teachers to have when setting content priorities. The focus in the approach to assessment is less on the production of correct responses and more on the process of reasoning that underlies the responses, student learning is best analyzed in an interactive context (Lampert, in press).

Adaptive Control of Thought Model

Kyllonen and Shute describe three basic types of learning: (1) declarative (fact) learning, (2) procedural learning, and (3) learning which is applicable to both types. Learning in declarative memory is accomplished solely by the probabilistic transfer to long-term memory of any new propositions (set of related nodes and links) that happens to be active in working memory. Knowledge compilation consists of two related processes. Learning by composition is the collapsing of sequentially applied productions into one larger production. This corresponds to the transition from step-by-step execution of some skill to one-pass(all-at-once) execution. Learning by proceduralization is a related process in which a production becomes specialized for use in a particular task. This corresponds to the transition from the use of general problem-solving skills to tackle novel problems to the

employment of task-specific skills, tuned to the particular problem at hand.

Strengthening operates somewhat analogously to the traditional learning principle of reinforcement. Both facts and procedures are presumed to get stronger and hence more easily and more reliably retrieved, as a function of repeated practice (Kyllonen, Shute, 1989).

Anderson's Adaptive Control of Thought theory models the dynamics of skill transition. The learner first engages in declarative learning; then the learner employs very general methods such as analogy, random search, or means-ends analysis, which operate on the declarative traced to achieve solution. The procedural learning component uses these general methods, achieves particular outcomes which are automatically compiled while they are being executed. When confronted with the problem again, the learner can simply recall that sequence from memory, rather than having to rethink from scratch. With continued practice, the skill is ultimately automatized in that it becomes possible to execute the skill without conscious awareness and without drawing on working memory resources (Anderson, 1993, 1987a in Kyllonen, Shute, 1989 p126-127; see also Simon, 1980, Newell, Simon, 1972, Bransford, Sherwood, et al., 1990; Sternberg, Wagner, 1989).

Kyllonen and Shute developed learning strategies based on a taxonomy of machine-learning research (Carbonell et al., 1983, Machalski, 1986; Kyllonen, Shute, 1989). See TABLE 17. Dimensions of the taxonomy include knowledge type, instructional environment, domain (subject matter) and learning style. The taxonomy is applied to the instructional system design steps as follows:

1. Determine desired knowledge outcomes
 - a. State the instructional goals (e.g., acquisition of a mental model, a set of propositions, a set of skills).
 - b. Specify the particular facts, skills, or mental models to be taught.

- c. Determine tests to be used for assessing particular knowledge outcomes.
2. Determine environment for achieving knowledge outcomes
 - a. Consider the kind of learning strategy desirable to invoke.
 - b. Consider alternative means for achieving knowledge outcome (to avoid instructional monotony).
 - c. Record student learning success with respect to the knowledge-outcome-by-instructional-environment matrix. This allows more precise statements of the effectiveness of the instruction.
 3. Consider learning style issues.
 - a. Consider whether to encourage particular types (styles) of interaction.
 - b. If learning style is left free, make provisions to record the manner in which the student interacts with the instructional environment. This also allows more precise statements of the effectiveness of the instruction.
 - c. If particular learning styles are encouraged through feedback and suggestions, consider varying the kinds of styles encouraged so as to allow experimental comparisons of the relative effectiveness of various styles (p156).

Anchored Instruction

Bransford and Sherwood's anchored instruction is a model for instruction designed to help students develop useful knowledge rather than inert knowledge. At the heart of the model is an emphasis on the importance of creating an anchor or focus that generates interest and enables students to identify and define problems and to pay attention to their own perception and comprehension of these problems. They can then be introduced to information that is relevant to their anchored perceptions. The major goal of anchored instruction is to enable students to notice critical features of problem situations and to experience the changes in their perception and understanding of the anchor as they view the situation from new points of view. Examples of anchors are a focal event or problem situation presented in verbal format and case-based approaches to instruction. Wales and

Stager's (1977) "Guided Design" introduced interesting problems plus a general framework for solving problems. Student generate their own strategies for solving the problems and then work with others to develop a group consensus. Each group's solution is then compared to the strategies used by experts in particular domains.

 Anchors enhance motivation to learn and permit students to integrate information across traditional subject areas. In college, students tend to develop encapsulated knowledge. The overall goal of anchored instruction is to overcome the inert knowledge problem by allowing students to experience changes in their perception and understanding as they are introduced to new bodies of information. Hopefully, students will realize that they failed to identify important issues, to define them from a constructive perspective or to design the most efficient and accurate strategies. Students gain a greater appreciation of the value of information plus a greater tendency to use it when it is appropriate in new situations (Bransford, Sherwood, et al., 1990 p122-138).

Machine-Learning Strategy

 One dimension of machine-learning research relevant to our concerns here is learning strategy, which Michalski (1986) defines as the type of inference employed during learning, and which he characterizes as follows: In every learning situation, the learner transforms information provided by a teacher (or environment) into some new form in which it is stored for future use. The nature of this transformation determines the type of learning strategy used...These strategies are ordered by the increasing complexity of the transformation (inference) from the

information initially provided to the knowledge ultimately required. Their order thus reflects increasing effort on the part of the student and correspondingly decreasing effort on the part of the teacher (Michalski, 1986; p14, p127-128).

Computers and Learning

There is a growing body of research into learning theory applied to computer technology in the form of interactive learning systems. Computer users in fields as diverse as banking, health care, communications, and transportation have difficulty understanding the structures and functions provided by various application programs and recalling the correct operating procedures for programs that are supposed to help them accomplish important tasks. Well-designed, user-friendly computer-based system permits users to experience mastery of the system, ease of using it, competence in performance of practical tasks, enjoyment, and even eagerness to show it off to others (Jih, Reeves 1992, 39-53). One reason for the general failure of ILS (Interactive Learning Systems) to dramatically improve education and training may be that learners lack clear conceptual understanding of the structure and functions of specific ILS (Schlechter, 1991). In passive media, interactivity is more dependent upon the existing mental processes and internal motivations of the learner than in ILS. Interfaces in ILS are designed to engage the learner in external behaviours such as making choices, answering questions, and solving problems.

Interaction is a critical communication activity in our daily lives. The idea of learning interactively means that the learner is an active participant in the teaching-learning process (Jonassen, 1985). For the most part we continue to use

less interactive tools for education and training, such as lectures, textbooks, films, slides, and videotapes (Becker, 1992). Human factor issues in computer technology include the heterogeneous population of users, increasing dependence on interactive systems in business, industry and communications, and high-performance requirements for computer users in life-critical applications. A machine-oriented perspective has been replaced by a human-oriented perspective based on the desire to accommodate the user's skills, experiences and expectations. Ackermann (1983) postulates that difficulties with human-computer interaction in problem-solving are caused by the discrepancy between individual mental representations and cognitive styles, and the given operations or the scope of action prescribed by the software. Books provide an excellent comparison. Reading aides, title pages, contents, chapter titles, headings, subheadings, page number, footnotes, indexes, appendices, and references help the reader understand the structure of the material, locate what we want, read the information and control the pace and sequence of our reading. ILS has its own unique navigation or interaction aids. Keyword searching instead of indexes, icons and menus instead of headings and subheadings.

There are multiple contributors to learning outcomes: the learners themselves, the instructional content and activities, and the interface between the learner and the program. One of the major themes in the history of educational research is the impact of individual differences on learning (Ackerman, Sternberg, & Glaser, 1989; Peterson, 1982; Gardner, 1983; Sternberg, 1985).

Learning is a function of the learner, the content to be learned, and the features of the instruction. Learning through any instructional medium requires activation of the cognitive processes that are specific to the instruction itself.

Learning is influenced by three dimensions of individual differences: personalistic factors, such as knowledge and experiences; affective factors, such as motivation and attitudes; and physiological factors, such as eye-hand coordination and visual acuity.

Learning Styles

Auburn and Auburn (1978) and Cosky (1980) agree that learning styles must be considered in the design, development, and evaluation of instruction. Messik (1984) refers to consistent ways in which an individual responds to a wide range of perceptual and intellectual tasks. Research emphasizes propensities and typical performance. Field dependence/independence, the learner's ability to identify figures embedded in a background field or to differentiate parts of a complex entity, to identify a part from a whole and to use the critical components of a problem in different ways, was one of the first learning style to be identified (Witkin, Moore, & Goodenough, 1977; Goodenough, 1986; Shipman & Shipman, 1985).

Field-dependent learners exhibit a passive approach to gradually clarify the common features of a concept and improve performance continually as errors decrease. They transfer more learning along simple stimulus continua and pay more attention to human interaction. They learn better in contexts in which social reinforcement permits them to avoid criticism and/or in which motivation is extrinsic. Field-independent learners use an active, hypothesis-testing approach to forming concepts and they improve performance suddenly when the correct hypothesis is discovered. They transfer more learning in different situations and

pay less attention to socially relevant cues. They learn better if motivation is intrinsic. Field independent learners favour discovery learning experience and are not easily influenced by environmental factors (Witkin, et al., 1977). Understanding a learner's prior experience, such as computer usage, can provide a link between the internal preferences and expectations and external interactive behaviours of the learner (Vaske & Grantham, 1990).

Learning ILS requires different types of mental efforts than learning from print or non-print media. Learners must cope with and integrate three types of cognitive load: the content of the information, the structure of the program, and the response strategies available. In order to respond, the learner must perceive options, conceptualize a choice, and take some physical action. The interface is the vehicle that allows perceptual, conceptual and physical contact with ILS. Learners learn to use programs by forming mental models consisting of a few uncomplicated, low-level heuristics and by making inferences based on mis-matches between their expectations and actual system reactions (Casner & Lewis, 1987; Lewis, 1986b). Users acquire and structure information delivered via interfaces, conduct mental operations, and accomplish physical activities during their interactions with computers.

Mental Models Theory

Mental models theory attempts to model and explain human understanding of objects and phenomenon (Gentner & Stevens, 1983; Johnson-Laird, 1983). Users seek new information in ways that depend on and are limited by their current mental models and learning goals (Tweney, 1987). What do users know about

interacting with computers (Carroll & Olson, 1984; Farooq & Dominick, 1988)? Do they use simple rules that prescribe a sequence of actions that apply under certain condition or do they use general methods that fit certain general situations and goals? Mental models are structures reflecting the users' understanding of what the system contains, how it works, how components are related, what the internal processes are, and why the system works in the way that it does. The notion that mental models colour all human behaviour implies that an awareness and managing of our mental models can provide us with some control over our experience and proficiency in specific tasks. Mental models affect such factors as the effort we devote to tasks, our persistence, our expectation and prediction of results, and our level of satisfaction after task execution. A mental model is a model that evolves in the mind of users as they learn and interact with the computer system. (Gentner & Stevens, 1983; Norman, 1983). It represents the structure and internal relationships of a system. User's mental model is the source of the user's expectations about the effects of actions; it can guide navigation and planning of actions and contribute to interpretation of feedback (van der Veer, 1989b). Mental models are used during learning and problem solving and when one is reflecting on a system's behaviour or attempting to rationalize or explain it (Carroll & Olson 1984). They are most important when first learning to use a program. When learners rely on trial and error, the guidance of a manual, or on another learner's advice, they learn only what they need to know and skip all else, thereby forming impoverished or inappropriate mental models.

A good manual or on-line help system can help Briggs (1990). There are two approaches to building mental models (Waem, 1990). Bottom-up learners react

to incoming bits and pieces of information, interact with the system, and gradually build a more consistent and complete mental model upward (Lewis, 1986b). Top-down learners evoke existing knowledge, modify it, and reconstruct it into a new mental model according to the information they perceive as they interact with the system. Most users use top-down to construct mental models, novice learners use bottom-up. Some common parallels are the typewriter model for word processing, the synoptic model for spreadsheets and the phone book model for database. It is easier for a new user to assimilate a given model than to induce one individually (Norman, 1983; Young, 1981, Moran, 1981).

Mental models are either verbal and propositional or visual and spatial; frequently they are pictorial or image-like rather than symbolic and representational (Tweney, 1987; Rouse and Morris, 1985). Differences in learner characteristics are important to research on mental models. Novices construct mental models of computer programs in different ways based upon prior knowledge, information-processing style, and general intelligence (van der Veer and Felt, 1988).

Measuring Mental Models

Kyllonen and Shute (1989) regard mental models as the most complex type of knowledge in a taxonomy that consists of propositional statements, schemata, rules, general rules, skills, general skills, automatic skills, and mental models. Using Young's (1983) suggestions, Sasse (1991) designed and conducted studies using five different approaches to measuring users' mental models: (1) observing users using a word processor program; (2) asking users to explain the program to a new learner; (3) asking users to predict behaviours of the program; (4) asking users

to describe the word processor; (5) observing users learning a new word processor program with a co-learner. Future studies may tell what individual differences in selected learning styles and computer experience are related to differences in the mental models learners form. How are the differences in learning styles, previous computer experience and mental models related to the navigational pathways of learners? How are the individual differences, mental models, and/or navigational pathways of learners related to the prediction of learning?

Ropes of Instruction Model

There are five cognitive phases to consider in the design of instruction: retrieving, orienting, presenting, encoding, and sequencing (Hannafin and Rieber, 1989b p71). See TABLE 18. This model provides a structure for designing instruction for both computer and non-computer learning.

Adult Learning Theory

Knowles (1975) coined the term andragogy for adult learning. The jury is out on just what andragogy is, but "whether you call it a theory, a philosophy, or merely a set of assumptions, whether it speaks about adults or people of all ages, andragogy is an honest attempt to focus on the learner. In this sense it does provide an alternative to the methodology-centred instructional design perspective" (Feuer and Geber, 1988, p39). See also TABLE 15.

The basic tenets of adult education theory have been put forth by an eminent list of scholars: Lindeman, 1926; Gessner, 1956; Jacks, 1929; Snedden, 1930; Leigh, 1930; Jackson, 1931; Russell, 1938; Weise, 1939; Merton, 1939;

Cherrington, 1939; Thomas, 1939; Fields, 1940; Rogers, 1951; Houle, 1961; Tough, 1971; in Knowles, 1975. The field was known as informal adult education in 1950's until Knowles (1975) coined the term andragogy in 1960's. The assumptions of andragogy entail changes in self-concept, the role of experience, and readiness to learn (Knowles, 1970).

Adult education theory utilises one of Dewey's tenets, students choosing to learn, whereby students select the goals of learning having one's needs and interests, short-term and long-term serve as guides (Jackson, 1986, 5, 98-114). Adult education experts have also recognized and regularly stressed the importance of learning how to learn. From Joseph K. Hart, a leader in the adult education movement of the 1920's, to contemporary adult education expert Malcolm Knowles, a major objective has been the development and refinement of a process for improving the learning-process skills of adults (James and Galbraith, 1985, Knowles, 1975).

Knowles' theory of adult learning has many of the same elements as cooperative or group learning theory. The elements of andragogical process design include climate setting, planning, diagnosing the need for learning, setting goals, designing a learning plan, and engaging in learning activities. Adult learning theory is based on the assumption that adults have resources that should be tapped in deciding what needs to be learned, how learning should occur, how learning should be measured, and what activities are needed to facilitate the learning. See TABLE 19.

In the climate setting phase, get acquainted exercises are used to establish the mutual resources of the group. The teacher provides information so adult

learners can gain an understanding of self-directed learning and the instructor's role. Trust building is accomplished by the meaningful experience of working together collaboratively in an atmosphere of mutual caring, support and intellectual rigor (Cahn, 1986). The planning phase consists of procedures for involving the adult learner in the decision-making process. These include consensus, voting by total group, delegation to sub-groups, and delegation to elected steering committee. Diagnosing the need for learning is achieved by having adult learners construct a model of competencies they wish to achieve. This has the effect of giving a sense of ownership. Assessing gaps between present level of development and competencies required by the model provides the information required to set goals. In this phase, adult learners translate diagnosed needs into learning objectives that are clear, feasible, appropriately specific or general, personally meaningful and measurable as to accomplishment. The next stage is designing a learning plan to be used as guideline. It should include alternative models, resources and strategies, and mechanisms to facilitate its completion. Finally, the adult learner will engage in learning activities. The learner and instructor both have a role in clarifying their perceptions of accomplishment of the learning objective. The instructor must attempt to avoid dissonance with learner's self-directedness while maintaining the responsibility for making judgments about the adequacy of the evidence of accomplishment of the learner's objectives and the adequacy of their criteria and means for validating their evidence.

Typically, adult learners will have problems with this model. This arises from their previous experiences with learning situations. Students may be uncomfortable with the lack of structure. Students feel the need for a clear

structural plan, outline, course syllabus, and time schedule and are accustomed to having the teacher in charge. Reassure students by discussing the structure as a process rather than a content structure. Assure Students that the instructor is ultimately in charge and ask them to be understanding of being asked to take more responsibility. There will be confusion over the content vs no content issue which can be explained by defining learning as a process of acquiring content rather than transmitting a pre-defined content. There may be questions about how grades will be arrived at fairly. Invite students to draft contracts in which they specify what objectives they will fulfil for a grade, study carefully and write detailed reactions indicating revisions required to make them acceptable at levels of grades specified.

Even with adults, "certain cases call for an andragogical approach, while others demand pedagogical methods." (Carnevale, Gainer, Meltzer, 1990, p47-48). A pedagogical approach is indicated where there is an established best way to perform a task, (ie. in skill-based courses). Leonard Nadler, professor of human resource development in the School of Education and Human Development at George Washington University, argues that the concept of self-directedness (the heart of adult learning theory) applies differently in the workplace than in adult education schools. (see Feuer and Geber, 1988). In the latter, students are in class because they are self-motivated to be there.

Modern Adult Learning Theory

The starting point for adult learning are the needs and interests that learning will satisfy. Life situations not subject is the orientation to learning. The core methodology is the analysis of experience which is the richest resource for adult

learning. Since individual differences increase with age educators should make optimal provisions for differences in style, time, place and pace of learning Adults learn best by doing and need to integrate new information with previous knowledge if they are to retain and use it Fisher (1985) and (Bartz, Calabrese, 1991).

TEACHING STRATEGIES

Historically, teaching strategies in business programs were influenced by the structure of the work world. In other words, business courses were taught in a business-like manner which would ready the student for the conditions they would find when they graduated and joined the workforce. It is only in the past decade that we have been forced to re-think and restructure our teaching strategies to reflect the changing reality of the work place. The so called "hidden curriculum" itself has undergone a radical change during the past few years as we move from the industrial society to the post-industrial society--the information age.

Attitudes and values are inculcated by the structure of educational relationships, which correspond to the structure of work relations with the key area of correspondence between teachers and bosses. Traditionally, the structure of courses, interaction among teacher and students, and assignments and evaluations supported authority relations. Critical consciousness is fostered through an open-discussion, problem-solving, inquiry approach to learning. This educative approach offers students skills and knowledge not just to do their jobs, but to think about their jobs: their nature, their purpose, their construction, and the relations they embody (Valli, 1986). Forms of consciousness and personality characteristics needed to integrate office workers into the right authority relations include such

qualities as perseverance, dependability and docility (Valli, 1986, p156). Social relationships of education, the relationships between administrators and teachers, teachers and students, students and students, and students and their work replicated the hierarchical division of labour (Valli, 1986, p131). The goals of teaching at the college level include fostering attitudinal and emotional changes as well as cognitive goals such as critical thinking, broad accumulation of knowledge, development of problem-solving skills and desirable attitudes (McKeachie, 1963, 1118-1172).

Jackson's two traditions within the domain of educational thought, the mimetic and the transformative, deal with the way in which knowledge is acquired. The mimetic involves the transmission of factual and procedural knowledge from one person to another through an essentially imitative process. This tradition, characterized by the epistemic method (episteme means knowledge), is a feedback-loop method of teaching where the instructor has substantive and methodological expertise and is seen as superior to students. Instructors intent upon the transmission of factual information, and those seeking to teach specific psychomotor skills, use mimetic procedures.

The other tradition is the transformative tradition whereby a metamorphosis occurs through acquiring the traits of character and of personality most highly prized by the society at large. Development of character, morals, attitudes, values and interests is accomplished by personal modelling, "soft" suasion, use of narrative and a psychological and epistemological relationship between teacher and student (Jackson, 1986, 6, 115-145). Jackson believes that teachers are engaged in what is fundamentally a moral undertaking much like that of Socrates, whether

they acknowledge it or not. A philosophic undertaking, moral in that it seeks moral ends, to bring about changes in students and themselves that make them better persons, not simply more knowledgeable or more skilful, but better in the sense of being closer to what humans are capable of becoming--more virtuous, fuller participants in an evolving moral order. Instructors who use discussion, demonstration, and argumentation armed with tools of reason are practitioners of the transformative method of teaching (Jackson, 1986, 6, 115-145).

Today education is polarized around the two views defined by Jackson, standardized education, competency-based curriculums, back-to-basics movement on the one hand (mimetic), and learning-to-learn, learning culture, creativity, problem-solving (transformative) on the other hand. The very language of educational goals and purposes--mastery, basic skills, competencies, accountability, achievement test scores are a measure of the quality and effectiveness of schools. How do we reconcile the language of educational goals to government white paper studies which promote the ultimate hegemony of a "scientific spirit" within the educational community? This trend is not limited to the field of education but extends to other institutions indicative of the interconnectedness of educational phenomena and broad social trends. Within the polarities of educational thought, few achieve a blend of these two pedagogical traditions--the linkage between the mimetic tradition and scientific/technological world view on the one hand and the transformative tradition and Socratic method on the other hand (Jackson, 1986, 6, 115-145).

Skill-based training or holistic education; circumstances are blending the two traditions as elaborated by Jackson so that in my area I merge the mimetic and

the transformative in an attempt to help students develop into well-rounded individuals. Teaching situations can be shaped to serve either tradition--depending upon the predilections of individual teachers, prevailing climate of opinion, administrative policies, and teachings of experts. Are we experiencing a marriage of two traditions, skills and values and attitudes? Technology does not operate in a vacuum, but necessitates a holistic solution evidenced by the evolution of office work from skills-based specialists to problem-solving, adaptable, creative, cooperative generalists. Which direction is the teaching profession as a whole moving? Teaching in our country and possibly the Western world, seems to be moving in the direction of becoming increasingly mimetic (Jackson, 1986, 6, 115-145).

Those who see the growth of the mimetic tradition as a regrettable link to the technological side, Orwellian "Bureautechnocracy" (Tescnoni, Morris, 1972, in Jackson, 1986, 6, 115-145), view it as a pattern of social management wherein the hierarchized, pyramidal, depersonalized model of human organization (bureaucracy) is linked with standardized, rationalized means (technology) with the overall aim of achieving control, flexibility, and efficiency in reaching some commercial or social objective. The questions arise, is this necessarily a bad thing, is it avoidable? These are the compelling questions our society must deal with.

Strategies for Teaching Required Workplace Skills

Mathematical, listening, problem-solving, creative thinking, self-esteem, interpersonal, and teamwork and learning-to-learn skills are required by employers (Carnevale, et al. 1990).

Mathematical Skills

The skills that underlie an employee's ability to perform mathematical tasks successfully includes (Cornell Institute for Occupational Education, 1980): quantification, computation, measurement and estimation, problem solving, and comprehension. Because skills in computation are of strategic relevance in the workplace (Henry and Raymond, 1983) (King-Fitch, 1985), they like reading, should be taught in a way that reflect their on-the-job use.

A report prepared for the Indiana State Board of Vocational and Technical Education (Kloosterman and Gillie, 1987, 1988) demonstrates the need for instructional materials that provide instruction in the basic skill of problem solving/logical thinking in ways that promote transfer of knowledge about one problem to a new problem.. incorporating in curricula for teaching basic skills in workplace mathematics a step-by-step problem-solving model that uses brainstorming, activates learner's prior knowledge and involves group cooperation. taught contextually as applied skills for the workplace. Even entry-level job tasks require the application of complex clusters of mathematical skills (Carnevale, et al, 1992).

Listening Skills

The reasons for poor listening skills include the complexity of the listening process, the characteristics of the speaker, the message and the environment (Carnevale, et al, 1992, p148). Good listening is a skill that can be taught on the basis of the situation, occasion, and content of a speaker's message (Ibid, p151). Included in the elements of good listening are the ability to select an appropriate style, to separate the person from the words, to find a reason to listen, to resist being judgemental, and not to react to emotionally loaded language or inflammatory delivery style. In addition, the environment can be organized to reduce barriers or interferences such as: poor seating arrangements, immoderate room temperature, high noise levels, lack of privacy, and interruptions. Good

listeners develop an awareness of interpersonal barriers or interferences such as: cultural differences, language problems, high stress levels, differences in attitudes and expectations, and nonverbal or verbal idiosyncrasies. Students can be taught to improve their listening skills using these techniques: concentrating one's mental and physical energies to shut out distractions; finding common ground to be objective; reducing stress or anxiety; listening actively by employing ears and eyes to observe changes in body language both face and body; and giving accurate and timely feedback.

Objectives for effective listening include: (1) to be aware of the importance of listening in everyday worklife, (2) to improve listening skills, (3) to learn techniques for self-development of listening skills, (4) to know the facts about listening skills, discussing humans as listeners, and discussing the listening process. Four basic strategies for better listening are: (1) to learn to empathize and read people, (2) to be flexible in your styles of listening, (3) to pay close heed to environment, and (4) to get feedback about your listening pattern/tendencies. Use videotaping to help students work on improving their listening skills. Play back, and discuss what students see in themselves as listeners (Ibid, p161). Effective strategies for fostering an awareness of barriers are group brainstorming followed by problem-solving exercises in small groups to come up with plan of action for reducing/removing.

Problem Solving Skills

The skills of individual problem solving encompass the cognitive abilities to understand classification (order, structure, relation); to understand levels (ability to change the focus of analysis to increase one's depth of understanding; to understand

points of view (ability to gain insight by experiencing alternative perspectives); and to understand deductive and inductive thinking, lateral thinking, dialectical thinking, unfreezing and reframing, critical/reflective thinking. Group problem-solving skills encompass the members' combined knowledge and skills which contribute to a better solution than one person can devise.

Strategies for group problem solving include brainstorming, synectics (Gordon, 1961), nominal group techniques, systems analysis, and force field analysis. By incorporating a problem-solving philosophy in all courses, we can better prepare students to become creative thinkers. Creative problem solving refers to a person's ability (alone or in a group) to discover new solutions to existing problems or to identify problems in new ways that promote their solution while creative innovation refers to the development of new products, market strategies, packaging solutions, production processes, and so forth (Ibid, p205).

Self-Esteem Skills

Another skill area which is becoming increasingly important is self-awareness or the knowledge of one's skills and abilities, impact on others, intellectual capacity, and of self-needs (Ibid, p219). An individual with good self-esteem demonstrates a willingness to take risks, the ability to function in an ambiguous and flexible environment, a willingness to assume leadership and responsibility, the ability to follow through on tasks, confidence in his/her work and competence in assessing it accurately.

Interpersonal Skills

Like self-esteem, good interpersonal skills are essential in today's workplace. In Portnoy's (1986) leadership portrait he highlights the skills necessary

in this area. Interpersonal skills can be taught by introducing students to the interpersonal skills necessary for personal and relationship development and dividing into small groups to role play and practice new skills with guidance from trained facilitators. Students are to determine their personal work styles and learn what work styles others may have, learn how behaviours are related to stress, and learn the important elements of a supervisor-student relationship. Role clarification is achieved through negotiation skills, role negotiating, modelling, mental flexibility, and goal setting. By developing group processing skills, group dynamics skills, teamwork training skills, group growth skills, risk-taking skills, and consensus-building skills students will learn integration and commitment. Conflict management and repair strategies are required for dealing with defensive behaviour and avoidance, dealing with problems, and blaming and hostile projections (Ibid, p299-303).

Teamwork Skills

"Teams are collections of people who must rely on group collaboration if each member is to experience the optimum of success and goal achievement."Dyer, (1987, p4). Quality teamwork results when team members know how to recognize and work with a wide variety of unique personalities and when each team member has a sense of the cultures and approaches that other member represent. Research on how people operate effectively in a team environment indicates that individual group members need to develop a consciousness about and competency in a set of behavioral skills (process observation, active listening, giving and receiving feedback, negotiating for contact, self-assessment, ability to intervene in the group process, goal setting, action planning, communicating and modelling) and a set of

conceptual skills (group development process, adult development process, creative problem-solving process, organization's operational culture, value of personality differences and constraints of communications patterns). Those who have achieved mastery in teamwork skills are capable of performing the following functions in a group setting when the need arise or the opportunity is appropriate: (1) establishing, communicating and clarifying goals, (2) securing commitment to goals, (3) defining and negotiating roles, (4) securing commitment to roles assigned, (5) planning an activity, (6) setting performance standards, (8) providing feedback to individuals and to the group, and (9) providing coaching and motivation (Ibid, p309-324).

Successful teamwork only occurs when team members understand the dynamic interaction among members and how the dynamics evolve as a team moves toward its goal. Several benefits accrue to organizations that use the MBTI (Myers Briggs Type Indicator) as a tool for improving teamwork skills (Hirsh 1985). First and foremost it identifies the strengths and weaknesses of people working together on projects and teams. This enables decision makers to parcel out assignments in a more productive way. "Productive team members share information, exchange ideas, contribute new directions, and solve problems" (Miskin and Gmelch, 1985, p127). Effective team membership requires mastering many areas of expertise: task-oriented skills, generic problem-solving skills, group-processing skills, and interpersonal-relations skills.

Initial team-building effort (Dyer, 1987, in Carnevale, et al, 1992) requires consensus on the level of priority of organizational needs to be addressed by the team, consensus on shared expectations of the team, clarification of the goals that

the team wishes to accomplish, agreement on work guidelines. The quality of teamwork is governed by the extent to which members are able to achieve operational competency in five structural areas: (1) accommodating the individual personalities of team members, (2) understanding individual members' communications patterns, (3) accommodating each members' cultural difference, (4) understanding the dynamics of the team as it progress through the growth cycle, (5) being aware of and using each member's job-specific skills and abilities.

Learning-to-Learn Skills

Exercises for improving learning-to-learn skills include learning, reading, taking notes, writing, taking exams and organizing oneself (Carnevale, Gainer, Meltzer, 1990 p64). Learning to learn comprises knowledge about how individuals learn, demonstrated skills in particular strategies for learning, and the ability to operate on a level of complex, interpersonal learning including self-directed learning, collaborative learning and learning through educational institutions. The objectives of self-directed learning are awareness of the self as learner; the identification and analysis of learning processes; introduction to the learning-style concept a perspective on personal learning styles; to carry out and analyze a personal learning project; conduct and analyze a personal learning project; use resource people on a one-to-one basis; extract relevant process learning from the project; synthesis of what has been learned and application of learning.

Teaching Higher-Order Thinking Skills

Our tendency is to separate content and process. Thinking skills are dealt with in isolation from subject matter content. Resnick (1987a), addresses this

isolation, arguing that higher order thinking skills must be embedded within school disciplines. "Paradoxically," she writes, "dropping the quest for general skills might, in the end, be the most powerful means of cultivating generally higher levels of cognitive functioning" (Prawat,1989 p-36).

The goals of collaborative learning are improved membership skills and teamwork development. This can be accomplished by helping people to understand the conditions under which adults learn best in face-to-face groups, learning how to learn with and from one another while using other resources as needed, and fostering the development of diagnostic skills and the ability to distinguish content from process. Research indicates (Smith, 1982, p152; Corno, 1988; Noddings, 1985) that cooperative learning techniques which stress the importance of group incentives and grades seem more appropriate for the lower level achievement test outcomes than higher-order learning.

Prior to engaging in collaborative, problem-solving activity it is considered helpful for participants to reach some consensus about the nature of the undertaking. As a result of this negotiation process, individuals can develop an appreciation for each other's roles and responsibilities. They can also establish norms of interaction that will govern how members of the group relate to one another (Cobb, et al in press; Lampert, in press). The concept of dialectical discussions in collaborative learning, (Roby, 1988; Barnes, 1983; Klinzing & Klinzing-Eurich, 1988; Uhlenbeck, 1978) utilize rhetorical devices, inviter, parallel, and reflective feedback. Valuing students contributions is required for successful group work. Getting students to view errors as natural, even useful is concomitant of learning (Dweck & Bempechat, 1983).

Team Learning Strategies

Organizations have restructured work using the principles of participative management and total quality management. This trend, which entails employee teams and work groups, dictates the use of groups and teams in the learning environment. Today, more than ever, students require skills in working and functioning as part of a group. Research on groups, (Slavin, 1983b; Johnson, Johnson & Holubec, 1986; Webb, 1988; Webb, Kenderski, 1984; Berliner, 1991; Hooper, Ward, Hannafin, and Clark, 1989; Latané et al., 1979; Kerr and Brunn, 1983;) indicate the advantages and the pitfalls of this type of learning experience. Based on group-learning research and on employer expectations we incorporated team learning, a variation of group learning, originated by Michaelson, (1992) in several of our courses in the 1993-94 term.

The origins of small group learning include peer tutoring as practiced in Greek and Roman times and cross-age tutoring carried on in one-roomed schools. Berliner's (1991) study of cooperative learning found that simply grouping students without shaping the environment may stimulate few cognitive or affective benefits. Cooperative learning is defined in terms of the four categories to which cooperation refers: behaviour, incentive structure, task structure, and motive (Slavin, 1983a p23). Cooperative learning requires careful awareness of, and attention to, student interaction. Effective interaction is influenced by several factors, including task structure, rewards, group dynamics, and interpersonal skills (Berliner, 1991). Cooperative grouping improves attitudes toward work and toward other students and generally facilitates improved acceptance of diversity (Berliner, 1991). Two indices of student interaction are equality and mutuality (Damon & Phelps, 1989).

Equality refers to equity between group members. When group members are equal, the flow of information is bilateral. Mutuality refers to the degree of engagement between group members. When mutuality is high, interaction between students is lively and extensive (Hooper, 1992 p23).

In cooperative learning, the emphasis is not solely on the transfer of information from more able to less able group members, rather it provides the opportunity for learning to occur for all participants.

Benefits of Team Learning

The benefits of cooperative learning are often measured in terms other than achievement. Johnson and Johnson, (1989) established that two reliable predictors of achievement were generating and receiving help and heterogenous ability groupings. They found that homogeneous ability groupings appear to stimulate discourse among the most able students but repress discussion among least able. Studies carried out by Webb, Kenderski (1984) determined that increased verbalization contributes to cooperative learning. The process of organizing information to provide clearer explanations to other group members may cause cognitive restructuring and result in the tutor's gaining a deeper understanding of the lesson content. Constructing alternative explanations may cause the helper to generate alternative symbolic representations of the lesson content, which may strengthen relationships between existing cognitive structures and the information to be learned (Webb, 1988).

Cooperative groups demonstrate the concept of modelling. Through observation, learners form rules that govern behaviour. Students can observe and

practice strategies and also model the amount of effort applied by other group members. This is particularly effective within scripted cooperative-learning environments which prescribe the nature and timing of student engagement (Webb, 1988). Webb's research also verifies the benefits of feedback. The cognitive process of listening to a partner summarize may modify the learner's perspective while listening to a partner comment on the accuracy of the summary may help summarizer. From a meta-cognitive perspective, cooperative learning may stimulate participants to emulate the amount of effort invested in learning by successful partners, observe cognitive strategies employed by peers, and imitate effective interaction techniques. Johnson and Johnson, (1989) found that the effectiveness of cooperative learning is most likely related to quality of group interaction. Several important cognitive processes that promote deep processing are enacted when students interact. Teachers can facilitate this process by creating an environment in which students generate and integrate lesson meaning through social interaction, observation and modelling.

Problems of Team Learning

Increased reliance on cooperative and team learning requires vigilance on the part of the instructor. Some of the dangers of experiential learning are too little focus on conceptual understanding, failure to provide sufficient instructional support, omitting discussions because teachers assumes students have assimilated the concepts, as a result, students may rely on their own misconceptions to interpret activities. Bereiter (1985), Anderson and Smith (1987) Smith and Anderson (1984), Smith and Neale (in press).

The willingness to cooperate may be influenced by the extent to which an individual's contribution is perceived as being valuable (Latane, Williams, & Harkins, 1979) as well as the extent to which other group members are perceived as producing effort (Kerr, 1983; Kerr & Braun, 1983 p25). A potential problem is the free-rider effect which happens when individual effort is perceived as unnecessary when other group members perform most of the work, Kerr and Brunn (1983). This leads to the sucker effect as members who perceive free-riding in their group reduce their individual effort. People are generally averse to being "suckered" into supporting non-contributing group members. If perceived "free-riding" is left unattended it may impair group learning. The solution is to make individual effort more noticeable in the group. One way is through what Hooper (1992) calls achievement contingencies, placing quizzes in instruction, continued group achievement contingent upon each student mastering quizzes individually. and providing additional support for those identified as needing help. These contingencies lead to those students recognized as "social loafers" being kept on task by peer pressure or social support. Hooper, Ward, Hannafin, and Clark (1989) and (Michaelson, 1992). Achievement is greater when an individual mastery strategy is used. Unless individual mastery is demonstrated, the product of group work may reflect only the achievement of the most able group members. Social loafing increases and motivation decreases as group size increases, individual effort tends to decrease and individual effort goes unnoticed Latané et al., (1979).

Individual and Group Accountability

Learning in groups can be attributed to a change in the student's role from passive information receiver to active knowledge builder. Students generate and integrate lesson meaning through social interaction, observation, and modelling. Groups must be carefully managed by teachers, and designers must consider how software design decisions will differ for group and individual use. Johnson and Johnson (1989), outlined five necessary components for effective cooperative groups; individual accountability, positive interdependence, promotive interaction, collaborative skills, and group processing (Hooper, 1992, p29).

Groups are positively interdependent when group success is dependent on all members. *Perception of positive interdependence is the single most important factor governing the effectiveness of cooperative-learning groups.* See TABLE 6. Positive interdependence enhances motivation and productivity, Johnson and Johnson (1989). Positive interdependence is sustained through promotive interaction, an individual's effort to help and support other group members to achieve group goals, (Johnson & Johnson, 1989). Interacting effectively is the most important factor affecting promotive interaction. The efficacy of cooperative learning is generally attributed to the quality of intra-group interaction which is partially attributed to group composition and age.

Tying individual success to the achievement of the group can result in optimal cooperative behaviour and increased mutuality. This positive interdependence is affected by the structure of the group task, incentives, and motivation (Johnson, Johnson, & Holubec, 1986) and (Michaelson, 1992). A crucial element in successful group learning is individual accountability. Teachers facilitate

the development of constructive peer relationships and thus create an effective cooperative-learning environment. Techniques include assigning individual rewards based on the average score of all group members and embedding achievement contingencies which help identify unproductive members. Group achievement is highest when all members contribute and individual performance is clearly visible. When group rewards are based on the performance of all group members, mutuality is likely to be high and students may be more motivated to care about the performance of all group members (Webb, 1988) and (Michaelson, 1992).

Slavin (1983b) concluded that group rewards based on individual learning consistently increase achievement in elementary and secondary schools. Cooperative learning is most effective when group success is contingent upon the efforts of every member, and when individual effort is obvious to and measurable by other members. Methods that simply encourage participation may be inadequate to ensure learning. Rewards must be used sparingly to avoid fostering performance rather than goal orientations. Identifying low-achieving and nonproductive group members may be facilitated by using achievement contingencies. Johnson, Johnson, & Holubec (1986) found that group members demonstrate mastery individually and this is used to help identify members in need of support.

Group Norms

Dweck and Legget (1988) found that effective cooperative learning requires students to learn new behaviour patterns and to be prepared to react differently than they do in traditional classrooms. Students must be trained to improve cooperation within small groups. Yager, Johnson, and Johnson (1985) suggest summarizing the

main points of lesson or simply discussing the lesson. Levin (1986) cautions against training in content-independent strategies and suggests selecting strategies to meet specific learning or task objectives. Global strategies may not transfer across learning domains (ie. summarizing is more important for developing intellectual skills than motor skills).

However some techniques may be generic to cooperative learning. Levin's generic grouping strategies include responding to and helping other group members, dissuading students from dominating or retiring from group work. Establishing these behaviours is often facilitated by instituting norms or rules that govern behaviour. Student should learn to give and explain their ideas to others in the group, students should listen to and ask others for their opinions and ideas.

Norms help establish acceptable and expected group behaviour. These steps help to ensure that students have adequate skills to cooperate effectively before participating in group work: (1) ask students to generate the strategies they believe will facilitate intra-group cooperation; (2) ensure all students understand each of the strategies; (3) provide an opportunity for students to practice and supply feedback on the effectiveness of the strategies; (4) encourage and require students to model the skills for others to adopt Johnson & Johnson (1987).

Group Processing

Intra-group reflection is needed to identify supportive and ineffective interaction and to decide which activities to continue or terminate. Group processing enhances future collaboration (Johnson, & Johnson, 1989) (Yager, Johnson, Johnson, and Snider (1986); develops collaborative skills, provides

performance feedback and reminds students to interact. Set aside five minutes after each session for students to analyze what they have done and how they could improve, provide examples of effective interaction skills and how they can be used.

Group Development

Resist dissolving apparently ineffective groups, they require time and experience to flourish. Charrier's (1972) model of group development known as Cog's Ladder, consists of five stages.

1. first stage: social interaction, members get acquainted and share superficial information, avoid conflict and serious discussion. Little productivity.
2. second stage: members focus on goals, group structure appears and individual personalities emerge.
3. third stage: power-seeking behaviour, leaders emerge as individuals attempt to exert influence and control, groups lack cohesiveness and may even divide as some members attempt to dominate.
4. fourth stage: shift from conflict to conciliation. Previously uncooperative members abandon personal agendas. Environment engenders team spirit as members accommodate opposing opinions and ideas. A group leader will emerge to facilitate the group by questioning, clarify and summarizing group ideas. This phase is often productive and group decisions are invariably more effective than any group member could produce alone.
5. fifth stage: establishes a fertile environment for creative conflict and constructive criticism. Members are intensely loyal within the group. Highly productive and exceed expectations, Few groups achieve this phase, likelihood of success is increased by group processing among group members and facilitated by teacher

Student Acquisition of Appropriate Cooperative Learning Skills

Two strategies for developing groups are interaction training and scripting. Interaction training involves teaching students to use effective interaction techniques. Students may forget or be unable to transfer interaction strategies from

training to learning environment. Scripts outline specific activities for students to follow during instruction. Students ask more sophisticated questions, provide more high-level explanations, and demonstrate higher achievement in scripted treatment than in others (King, 1990, McDonald et al., 1985).

The following list proposed by Johnson and Johnson (1989), defines a process for helping students acquire appropriate cooperative learning skills.

1. ask students what skills they think they will need in order to cooperate (compete, work individually) successfully
2. help students get a clear understanding of what the skill is conceptually and behavioural. Set up practice situations
3. ensure that students receive feedback on how well they are performing the skill
4. encourage students to persevere in practicing the skill
5. set up situations in which skill can be used successfully
6. require the skill to be used often enough so it becomes integrated in students' behavioral repertoire
7. set classroom norms to support the use of the skills

The important skills for cooperation are *communication skills*, *skills in building and maintaining trust*, and *controversy skills*, Johnson and Johnson (1989).

Communication skills

1. own your messages--state them clearly and unambiguously by using personal pronouns and letting others know your thoughts and feelings
2. make messages complete and effective
3. make verbal and non-verbal messages congruent
4. ask for feedback concerning the way your messages are being received

5. state your interpretation of sender's message and negotiate with sender until there is agreement on meaning

Building and maintaining a trusting climate

The crucial elements of trust are openness and sharing, acceptance and support, and cooperative intentions.

1. sharing materials and resources
2. giving and receiving help
3. dividing the work
4. contributing to the achievement of mutual goals
5. openly contributing information, ideas, thoughts, feelings, intuitions, hunches, and reactions to group's discussion and work
6. expressing acceptance, support and the desire to cooperate
7. expressing cooperative intentions, acceptance and support to each other during their cooperative interactions. Point out rejecting and non-supportive behaviours that shut off future cooperation such as silence, ridicule, superficial acknowledgment of an idea

They suggest that groups fill out the questionnaire on trusting and trustworthy behaviour and discuss results to see how their cooperation could be improved in the future. See TABLE 7.

Controversy skills

Controversies are necessary for creative insights and productive work in complex problem-solving situations.

1. define as problem-solving situations in which differences need to be clarified, rather than win-lose conflicts where one person's ideas have to dominate
2. be critical of ideas not persons

3. appropriately pace phases of the problem-solving process, differentiation (bringing out differences) and integration (putting different ideas together)
4. take the point of view or perspective of other students so you understand what they are saying from their frame of reference

Active Learning

The major characteristics of active learning strategies, based on the adult learning model (Eison and Bonwell, 1988), are: participants engage in activities; facilitator designs activities which explicitly acknowledge and use the collective experience and expertise of group members; facilitator place greater emphasis on influencing participants' skills than on transmitting information; participants receive immediate feedback from facilitator and other group members. Subject matter is introduced through handouts, annotated bibliographies, audio visual media, or other reading materials. Large group are divided into several smaller groups for discussion activities and/or sharing of responses to short writing assignments (Weimer, 1987). Some of the risks of active learning strategies are: lack of student participation, failure to learn a sufficient amount of new material, or enjoy the experience, and the facilitator may not possess the needed skills or feel self-confident and in control.

Trust building is an essential part of active learning. One way to accomplish trust is to have participants introduce themselves to one another while engaging in a content-appropriate activity. engage in sharing first in pairs, then in groups of six then in large group Barnes-McConnell (1985).

The Lecture Method

In college classrooms, the prevalent mode of instruction is still the lecture (McKeachie, 1963). There are, however, several modifications to the lecture method of teaching.

Under GLP (Guided Lecture Procedure), students refrain from taking notes during lecture, but instead engage in an intensive listening and thinking process. The instructor should provide a purpose for listening without taking notes, lecture objectives should be clearly described and new vocabulary introduced, after thirty minutes the instructor should stop and students should write down everything they can recall, after five minutes, students should work in groups to discuss the lecture and to improve notes by identifying major concepts, arranging material in sequential order, and drawing conclusions. Engaging in short writing activities (Fulwiler, 1982; Fulwiler, Young, 1990) helps people generate, develop, organize, modify, critique, and remember their ideas. Students learn to improve listening skills. (Kelly, Holmes, 1979)

Frederick (1987) featured several strategies to make lectures more lively. These include the participatory lecture (orderly brainstorming), the problem-solving demonstration, proofs and stories (lectures that begin with a paradox, enigma, or unfinished story), and textual exegesis, modelling analytical skills. Active learning strategies for large classes include: interactive lectures; questioning; using small groups in large classes; critical-thinking and problem-solving exercises; large-class debates, simulations, and role-playing Frederick (1987)

Osterman (1984; 1985) described the feedback lecture with benefits for students having one of four different learning styles: innovative and feeling, enjoy

discussion sessions which focus on meaningful applications of the material and on the one-on-one discussions with the instructor who circulates around the room; analytical and thinking, enjoy two twenty minute lectures; common sense and sensing, enjoy the demonstration and "how to" material found in the study guide as well as the five minute in-class problem-solving activity; dynamic and intuitive, favour the study guide's pre- and post-tests along with its self-discovery material (in-class and out-of-class activities).

The Discussion Method

Bligh's (1986) research found that discussions are among the most difficult teaching techniques. Discussion require the teacher have a wide knowledge of the subject matter, an ability to attend to detail while keeping an eye on the overall view, an appreciation of different points of view, receptivity to new ideas, tolerance and respect for problem students, and the maturity to manage a group of students without dominating them. Common fears about leading discussion are the fear of silences, challenges of shy or dominant students, problems of digression and transition, fear of having to say "I don't know".

A discussion is: a social activity that takes place with a group of people; a cooperative endeavour; rational and purposeful; systematic and ordered; creative; requires active participation; involves leadership Hyman (1980). Discussion leading skills include contributing, crystallizing, focusing, introducing/closing, questioning, and supporting. Hyman defines five different types of discussions: policy discussions which explore how a group should act regarding a particular issue; problem-solving discussions in which a group seeks answer to a problem or

conflict facing it; explaining discussion which analyzes the causes or reasons for a given situation; predicting discussions which focus on predicting probable consequences of a given situation; debriefing discussions in which participants reflect on the facts and explaining of a shared activity.

Integrated Curriculum.

As the world becomes more complex and knowledge more compartmentalized, students need courses that expand their perspectives across traditional disciplines (Gammill, et al, 1992). According to Gammill, et al, many researchers have agreed on the importance of a more integrated curriculum (Miller & McCartan, 1990; Marx, 1989; Newell, 1983) and on courses that reinforce critical skills, (Brevik & Gee, 1989; Farafalo & Lo-Presti, 1986). The benefits of linked courses include student integration of learning, faculty modelling team work behaviour of collaboration and cooperation, and the opportunity to experiment with pedagogical techniques (Boyer, 1990). Courses which can be successfully linked are accounting, marketing, finance, economics business communications, English, library research, and computer course such as word processing, spreadsheets, databases, communications, and desktop publishing.

Teaching Adults

Placing incoming students together throughout their program in learning communities (Grabelnick, et al., 1990; Kur and Pedler, 1982) allows a group of people come together for a week or more or meet at regular intervals for months or years to engage in intensive learning. Cohort grouping provides a vehicle for

students to interact about content, study together, work on common problems, and assist each other with difficulties, support systems and cogs in the networking wheel (Bartz, Calabrese, 1991).

In cooperative learning groups, four or five members work collaboratively to solve problems or complete a group project, enhance interpersonal skills, team building and working effectively in groups (Dishon and O'Leary, 1984). These groups are characterized by distributed or shared leadership, heterogeneous membership, positive interdependency or recognizing and valuing dependence among one another, social skill acquisitions or working effectively with others, group autonomy from teacher so that it solves its problems in its way.

One of the basic tenets in adult learning is the concept of self-development whereby individuals assume responsibility for their learning and development. Students should be proactive in seeking and pursuing knowledge and skills. This concept assumes students want to acquire knowledge and skills that will cause them to grow and improve their professional knowledge and skills. This concept needs to be stressed and critical elements reviewed with students. Objective self-assessment, the willingness to admit weaknesses, the self-confidence and security to share weaknesses with others, the need to use reflective thinking to evaluate one's own actions and thoughts during and after learning activities, the ability to experiment with one's behaviours, emotions and intellect, the knowledge to identify learning resources, the ability to probe ones learning styles and being flexible in using various learning activities are required of a self-directed learner. (Bartz, Calabrese, 1991).

Adult learners must engage in reflective practice (thinking). This involves analyzing or critiquing one's thoughts and actions for behaviour processes needed to perform in the actual job setting (Schön, 1983). There can be reflection-on-action or reflection-in action effected in debriefing sessions, small group discussions where students are asked to analyze and critique what they did, why they did it and what their thoughts were, using descriptive rather than evaluative comments. Activities are more difficult to develop and may be behaviourally contrived (role-playing), but, conscious striving by students must be continually stressed. This process, which can emphasize creative or divergent thinking, which stresses the identification of alternative ways to perceive a problem and identify associated solutions (deBono, 1985), may be necessary for many companies to be competitive internationally.

The structure of adult learning activities is important. More learning activities should be moved out of the school environment and into actual settings in which the studied knowledge is meant to be applied. This would have the added benefit of strengthening ties with business and industry. (Bartz, Calabrese, 1991).

BRIDGING TO THE FUTURE: PROGRAM EVOLUTION

Traditional concerns about the social or civilizing functions of higher education have been replaced by an emphasis on the responsibilities of higher education towards the economic system. Priority is given to the ways higher education can make a more explicit and immediate contribution to economic growth and social development. (Lajeunesse, Davidson,1992). The view and the values of society are constantly changing to adapt to ever changing sociological, economic, and political events (Dewey, 1938). As our economic structure changes to meet the challenges of globalization and technology, governments too are restructuring to adapt to the changing needs of the workplace.

Post-secondary education is also undergoing radical changes in developing and delivering their products. And what are the products of the education system? Are they the programs and curriculums they deliver? Are they the graduates of those programs? And who are our customers? The students who come to take our courses and our programs? The employers who hire our students? These questions and others of similar ilk, and the social and economic environment guide us as we try to develop and offer courses and programs which will enable our students to find employment, to develop life-long learning, and to become productive members of society.

Modern telecommunications is bringing the world to our doorsteps while global travel and business continues to develop interdependencies and mandate cooperation between nations. The growth of information, a consequence of technological advancements has given birth to a new set of issues for society and individuals in the workplace. As the economy recovers, jobs are disappearing and

those that remain are becoming increasingly part-time and temporary as companies strive to remain globally competitive. The chairman of the world's largest temporary employment agency, Manpower, Inc., Mitchell Fromstein:

"The U.S. is going from just-in-time manufacturing to just-in-time employment. The employer tells us, "I want them delivered exactly where I want them, as many as I need, and when I don't need them, I don't want them here." (Dickerson, van Tassel, McWhirter, 1993).

Employees are expected to know the latest technology, to be adaptable, to be flexible and to be able to learn on the job. Full-time employees must know how to function as contributing members of the team. Employers are realizing that a good employee is a self-fulfilled employee. Skills alone do not prepare an individual to do the job. The concept of team management and the definition of an employee as a member of the team clearly indicate the necessity of expanding business programs to a more holistic view of work, as not only a way to earn a living, but also a means to achieve satisfaction, self-esteem and contentment.

Curriculum review and program changes are an ongoing process in the office technology program. Initially, changes were largely technologically driven as we added computer classes to give students those skills. In the past two to three years, the automated office has become a reality and the nature of work in the office has fundamentally changed. Office employees, formerly called secretaries and clerks, are now referred to as customer service representatives, office assistants, executive assistants, information processors, or information managers in the office of the nineties. Skills are a necessary but not a sufficient requirement for obtaining and keeping a job. Today, more than ever before, office workers' attitudes and values toward learning, problem-solving, creativity, and team work are crucial to

success in the workplace. The highly trained specialists of the seventies and eighties have evolved into the well-trained, adaptable generalists in the nineties. At Medicine Hat College, we have attempted to develop a program which teaches not only the traditional office skills of keyboarding, office procedures, communications, bookkeeping, computer, computation; but, in addition, interpersonal skills and management skills so that our students will be prepared to work in the quality team environment they will surely step into.

PROGRAM BACKGROUND

This paper will take you through my observations and experiences in the restructuring process of the Office Technology program at Brooks Campus as I have experienced it and continue to live it. Because of the smaller class size (16 - 20 in Brooks compared to 30 - 50 at Medicine Hat), Brooks has been able to lead the way with technological changes in the program. The program has included word processing and a microcomputer course for the past ten years. In 1988, the program was modified by incorporating a word processing component in the machine transcription course. In 1990, Cortez Peters Skill Building® software was introduced for advanced keyboarding and in 1991 Cortez Peters Skill Building and Applications® software was introduced in beginning typing. We are now at the point where keyboarding is taught on microcomputers, and production keyboarding is taught using word processing technology. In addition, microcomputer technology is integrated into office procedures, office management, accounting, business math, and business English. All students take an introductory course in microcomputers to learn to use the technology, including operating systems, word processing,

spreadsheets and databases. All other courses require students to use the technology for completing assignments where applicable.

We have attempted to balance the program among knowledge and skills, technology and interpersonal relations. The ability to work with others has always been an important skill for the office worker. Technological changes have changed the very way that business is conducted and, paradoxically, people skills have increased in importance. It is not enough for workers to be able to relate well with others, they must now be contributing members of work groups and be ready to take their place in the decision-making process.

A unique feature of the office technology program at Brooks was the Office Technology Club. My predecessor established the club when she began teaching the new office technology program in Brooks in 1982. Her objective was to provide a mechanism which would oblige students to learn to work together. The club was mandatory for all office technology students and participation was graded through the office procedures classes. Each student served either on the executive committee or one of the other committees. Grading was accomplished through a process of self and peer evaluation.

The club has proven to be motivational in building a culture of commitment to and support for the office technology program from all students in the program and at the college. Several changes have been made to the club in an effort to make it relevant and to enhance the learning opportunities flowing from participation. From its beginnings as a social club we have expanded to the point where the club gives students many opportunities to use the knowledge and skills they are learning in the program. Presently the goals of the club include: raising

funds for scholarships for deserving members, publishing a bi-monthly newsletter, and developing ties with the business community.

DEMOGRAPHICS

The Brooks Campus, a satellite of Medicine Hat College, is located in the town of Brooks, Alberta. Classroom and administration space was leased from the town in the old hospital building and classes began in the Fall of 1979. In September 1991, the new Brooks Campus building was opened on land donated by the late Harry Vinier. The Brooks Campus offers first-year university transfer courses, certificate/diploma courses, academic upgrading courses, conservatory of music, and community education courses.

Student Profile

Fall 1993 enrolment at the Brooks Campus was approximately 300 credit students; 17 in the office technology program. The majority of our students are from Brooks and surrounding communities. Students vary in age from seventeen years to fifty years. Over the years the mean student age has been dropping and the average student now is approximately twenty eight years old, a single mother, with a part-time job. As a result, a significant number of students take the program on a part-time basis, completing it in one and a half or two years instead of in one year.

Writer's Profile

I was employed in the summer of 1986 to teach office technology at the Brooks Campus. My responsibilities include teaching specific courses, coordinating the program in Brooks, counselling students, working with other instructors who are teaching office technology courses, working with business administration instructors to define articulation of courses between the two programs, liaison with the local business and educational community, liaison with the Office Technology coordinator at main campus, on-going curriculum and program review, and self-evaluation and professional development to maintain a current focus. My job is to work with the whole person to help them acquire skills and develop those attitudes which will enable them to cope with the world of work and achieve their personal and career goals within that framework.

Teaching Specific Courses

My teaching duties have evolved during the time I have been at Brooks. Initially I taught beginning and advanced typing, introductory office procedures, machine transcription, office management, microcomputers, basic accounting and word processing. Presently I am teaching introductory microcomputers, introductory office procedures, basic accounting, computerized office applications, advanced microcomputers, and computerized accounting.

Coordinating The Program

It is absolutely essential to maintain and nurture a dialogue between main campus and Brooks campus. Through working closely with the Office Technology

coordinator, we are able to monitor course conflicts and overlaps, establish course objectives, review textbooks and resources, and share information and feedback. The struggle to maintain lines of communication has paid off in the on-going review of the Office Technology program. During the period of April 1991 and August 1993 Brooks and Medicine Hat cooperated in an in-depth review and consequent restructuring of the program.

In Brooks, I work closely with the front office staff and student counsellor to keep them informed of changes and ramifications for registration purposes. Prerequisites and scheduling are two issues that require constant attention. In addition, I counsel students as required. Because we are a small campus, I am able to meet informally with those instructors who are teaching courses in the program and thus monitor the program on a daily or weekly basis.

Office Technology Program Profile

The program first ran in Brooks in the fall of 1982. Since its inception, the program has had a quota determined by physical equipment capabilities. From 1982 until 1990 maximum registration was 16 students. From 1990 to the present time maximum registration is 20 students. The Office Technology program is a one-year certificate program intended to prepare secretarial and clerical personnel for the entry level jobs in the workplace.

Lab Issues

We are definitely constrained by hardware and software. Massive reductions of operating and capital funding over the past five years has made it almost

impossible to carry out the required maintenance and upgrades to our labs.. One of our labs which is for all intents and purposes, obsolete, is primarily used for keyboarding classes. This lab, the office technology lab, is arranged in an open layout, and is equipped with computer desks which allow for the computer case to be lodged under the desk. Students have an uninterrupted view of the instructor and the white board. There is adequate work area for note taking and adequate space between desks so students are not cramped. However, the majority of our classes are taught in the other lab because it has better hardware and software. The 386 networked lab is arranged with two double rows of computers on either side of the room. The tables hold the computer case with the monitor on top, the keyboard and the printer. There is no desk space for note taking and students sit cheek by jowl. All of our courses which have a computer component are taught in this lab, to take advantage of the latest software and the laser printer. This arrangement of hardware causes several problems for both instructor and students. The students are extremely cramped, they have no place to put their books, take notes, and the height of the monitors make it very difficult for the majority of the students to see the instructor or the white board. The end result of this is that students tend to work on the computer and ignore any instruction or demonstrations that are occurring at the front of the room. Another problem is students looking at each others work, during quizzes and exams. The close proximity makes it impossible not to notice the person's screen on either side. The setup of the room does not lend itself to circulating while instructing. Typically, instructors end up having to help students at various stages of problems instead of staying with the whole group.

Hardware

1982 to 1986	AES word processors and IBM PS1's were available for student use.
1987	16 IBM compatible AT's with 40 MB hard drives
1993	16 IBM compatible 80286 machines with 640 KB RAM and 40 MB hard drives 20 80386SX machines with 40 MB hard drives and 1 MB of RAM
1994	20 80386SX machines upgraded to 4 MB of RAM and networked on a 20 user Novell network with a 80486DX, 8MB RAM, 1 GB hard disk, file server

Software by course

Keyboarding	WordPerfect 5.1 Cortez Peters Skill Building Cortez Peters Skill Building and Applications DOS 5.0
Business Math	PC TOOLS 8 ACCPAC Simply Accounting Quattro Pro Windows
Office Procedures	WordPerfect 5.1 PC TOOLS 8 dBase IV Lotus 123 DOS 5
Communications	WordPerfect 5.1 Express Publisher

Microcomputers	DOS 5 WINDOWS 3.1 Novelle 3.1 WordPerfect 5.1/5.2 Lotus 123 Quattro Pro Windows dBase IV PARADOX Windows
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Office Applications	DOS 5 WINDOWS 3.1 WordPerfect 5.1/5.2 Quattro Pro Windows Lotus 123 Express Publishers ProDesign PC TOOLS 8
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In an effort to circumvent the instructional problems arising from the layout in this lab, we have equipped our lecture theatre with a WINDOWS compatible computer and software hooked to an overhead projector. Next semester, we will teach the demonstration portion of computer classes in this classroom. Ironically, main campus switched from this method two years ago when they obtained a teaching lab with under the desk monitors and computer cases allowing for unobstructed vision of the instructor. The instructors work station is equipped with software that will let them access students' screens.

Another problem at the Brooks campus is computer lab access. Credit courses are booked into the labs first, then community education courses are booked into available slots. Depending on the number and type of programs running, lab access time for students is often restricted to a stray hour here and there and four hours on Saturday and Sunday afternoons. The outcome of this situation has been that assignments in computer classes have been curtailed to the

point of trying to get everything completed during class, or relying on students to complete assignments on their computers at home. The effect has been to lower the quality of the learning experience for the student. In the coming year, the policy on lab assignments will be reviewed to alleviate the problems. Although approximately one third to one half of the students in our program have their own computers when they begin or purchase one during the year, there is still a need to have adequate blocks of lab time for students to complete assignments. We have discussed the idea of blocking out specific times for students to access the lab for homework. and will be looking at this more in the future.

PROGRAM CHARACTERISTICS

Prerequisites

Students may choose one of two streams depending on their educational qualifications and their own needs. Keyboarding ability, along with English and mathematics pre-requisites become the determinants of which program students are admitted to. See table below.

PRE-REQUISITES BY YEAR AND STREAM		
YEAR	OFFICE INFORMATION ASSISTANT	OFFICE INFORMATION SPECIALIST
1982 - 1988	Math 10, English 20	Math 10, English 20
1988 - 1994	Math 10, English 20	Math 10, English 30/33
1993	Math 20, English 20	Math 10, English 30/33

Program Review Process

The Office Technology program at Medicine Hat College has evolved through a continuing process of internal review and feedback from students and the business community collected through phone surveys, see APPENDIX THREE (page 133, 136), questionnaires, advisory committee input, personal interviews and evaluation of the career experience students. See APPENDIX SIX (page 149)

From its inception, the mission of the program has been to provide relevant education and training for students entering the workforce. Our focus has been to anticipate changes and meet the clerical/secretarial needs of industry, business and government. We have undertaken the responsibility of maintaining close communications with the workplace through the use of advisory committees, questionnaires, interviews, and personal contact with the community. Our program has been modified to reflect the perceived and expressed objectives of the community.

From the beginning at Brooks campus, there has been a trend to integrate computer technology in the program and, in the latest model, in all courses. At all times, we have attempted to remain cognizant of one of the inherent problems in

technology--losing the human touch. Often, students fail, not as a result of poor technical skills, but rather due to weakness in the area of interpersonal and communications skills. Thus, we have attempted to concentrate on people skills as well as technical skills.

We embarked upon the review in an effort to better prepare our graduates to meet the demands of a rapidly changing workplace. The culture of offices and business is changing. Change is driven by local, national and international changes in the workplace. As business, industry and governments have had to restructure to meet the demands of increasing globalization driven by technological advancements, so too education has gone through review and restructuring in response to the remodelling of our total environment.

Globalization and technology are mandating a new style of management and therefore a re-working of traditional office jobs. As the organization structure flattens, decision-making is being pushed downwards to lower levels. Participatory management and working in teams are replacing more traditional ways of doing things. New skills, attitudes, values and behaviours are needed to survive and progress in this new environment.

We began our job by taking a look at the two streams in the office technology program and the courses that make up each stream. Our initial task was to revise the goals and objectives of the one-year certificate. We agreed that our graduates will require:

1. a strong foundation in basic office skills and procedures for the manual/automated office
2. mastery of a variety of applications software common to the manual/automated office

3. the ability to apply technology to all areas of office work
4. familiarity with office management principles and concepts
5. competence in working with others as part of a team
6. capability to take initiative and solve problems

Basic skills were covered in the existing program. The technological and interpersonal areas required attention (computer skills, people skills, personal skills). One way to accomplish our objectives was by incorporating technological advances in the curriculum, another was to increase our focus on communications, team work, and problem solving (see attached Employability Skills pamphlet)

The one-year certificate program should consist of two streams:

1. a basic stream which prepares students for entry-level positions in the manual/automated office and
2. a more advanced stream which builds on the basics by strengthening micro computer skills and provides a broad overview of business in the context of its environment.

After conferring with the Business Administration and Office Technology Advisory committees in Medicine Hat and Brooks we settled on *Office Information Specialist (OIS)* and *Office Information Assistant (OIA)* as names for the two streams.

Office Information Assistant

The focus of the OIA stream is on preparing the student to become an integral part of the employee/management team with special emphasis on:

1. the employee in the manual/automated office environment
2. organization and management of the office

Graduates from this program will have:

1. a basic understanding of information processing in the manual/automated office
2. mastered the most common computer applications found in all areas of office work (document processing, communications, records and file management, bookkeeping, time management)
3. developed a basic grounding in secretarial skills and procedures for the manual/automated office
4. an introduction to office management principles and concepts
5. worked on their own and together in teams to solve problems and complete tasks.

Office Information Specialist

The focus of the OIS stream is on preparing the student to become an integral part of the management/employee team with special emphasis on:

1. the employee in the office environment and the office in the business environment
2. a fundamental grounding in business management principles and processes
3. advanced automated office applications experience

Graduates from this stream will have:

1. a basic grounding in secretarial skills and procedures for the manual and/or automated office
2. an understanding of office management principles and concepts
3. been well-grounded in office automation through advanced computer applications and exposure to computers in all areas of office work (communications, records and file management, accounting, time management)
4. an introduction to management principles and processes as they apply to the business environment, people and productivity issues

Taking the above objectives into consideration, we designed the two streams as follows. Students in both streams take keyboarding and document production, introductory and advanced office procedures and office management, written and oral communications, introductory microcomputer applications in business, solving business problems, and advanced office applications and document production. Thus, there are three areas in which OIA and OIS are different. Students in the OIS stream have more accounting, microcomputer and keyboarding skills than those in the OIA stream.

OFFICE TECHNOLOGY 1993-94

Office Information Specialist	Office Information Assistant
Fall	Fall
BUSI 104	BUSI 100 OR BUSI 104
BUSI 131	BUSI 131
BUSI 151	BUSI 151
ACCT 111*	BUSI 110*
MICO 191	MICO 191
Winter	Winter
BUSI 106	BUSI 104
BUSI 114*	BUSI 106
BUSI 133	BUSI 133
BUSI 250	BUSI 250
BUSI 267	BUSI 267
MICO 193*	
* DIFFERENTIATES	* DIFFERENTIATES

COURSE DESCRIPTIONS AND RATIONALE

ACCT 111 Introductory Accounting

5 HOURS

This is a common course for business administration and office technology (information specialist) students. Students cover the accounting cycle including journalizing transactions, work sheets and preparation of statements, handling cash, specialized ledgers and journals, accounting for a merchandising concern, GST, receivable, payable, inventory valuation, and asset management. Students complete a manual practice set.

This course uses the same textbook as BUSI 110 but covers five additional chapters. Students wishing to take additional accounting courses must take this course rather than BUSI 110. Since this is a business administration course, we have little input into content. The course is accepted for transfer credit to the CGA, CMA, and CA programs. We have suggested adding a computerized component to this course.

OIS students are required to take this course. In addition to basic bookkeeping, they learn receivables, inventory, depreciation, and payables. Successfully completing this course gives students the background to handle the advanced spreadsheet concepts they encounter in MICO 193.

BUSI 100 Beginning Keyboarding and Applications

5 HOURS

This is an introductory keyboarding class for the beginner. Students learn the Cortez Peters method to type from sight (touch type) at a minimum of *25 to 30 words per minute* with one error or less on a five-minute timed writing while demonstrating good posture and correct finger control at the keyboard. Students

work at developing accuracy and gaining keyboarding speed in producing mailable copy of displays, letters, tables, and memos.

Keyboarding is an invaluable skill for all office workers. Our graduates have a minimum keyboarding skill requirement of 45 words per minute with one error or less on a five-minute timing. We feel that all business students should be taking this course and encourage our business administration students to take it as an option. OIA students with little or no keyboarding take this course.

BUSI 104 Word Processing, Skill Building and Applications

5 HOURS

This course is designed to advance student's knowledge of document processing techniques and build on speed and accuracy. Student's set up, in mailable form, all types of office correspondence using advanced word processing concepts and software. Students work at perfecting proofreading and language skills and develop confidence and competence in performing all word processing tasks from un-arranged material while continuing to develop keyboarding speed and accuracy in producing mailable copy at a minimum of *45 to 50 words per minute* with one error or less on a five-minute timed writing. In keeping with the goal of increased productivity, students are expected to use reference manuals as required. Pre-requisite 30 words per minute.

Since we made the switch to microcomputer, we have had problems in maintaining a cohesive focus in the course. We have moved away from a focus on production to a focus on word processing skills in the sense of learning to use various word processing functions. We must be diligent in maintaining high levels of accuracy in the production of documents of all types. This has become more

complicated with the addition of graphics, tables, columns, merges, document summaries, and desk top publishing. Mailable or distributable, error free copy must be the final product of this course. Language and proofreading skills are essential for success in this course. We have had difficulty in finding a suitable textbook for the production portion of this course. We use Cortez Peters Skill Building and have used various word processing books as a supplement. The Farmers, Graham, Jenkins book that we used to use is not appropriate since it combines keyboarding and production typing. Currently, we are considering other books.

BUSI 105 Advanced Keyboarding, Skill Building

3 HOURS

In this advanced class, students use the Cortez Peters method to continue developing keyboarding speed and accuracy in producing mailable copy from arranged and un-arranged material at a minimum of 50 to 65 words per minute with one error or less on a five-minute timed writing. Pre-requisite 30 words per minute.

The instructor's involved in teaching this course feel that three hours may be too much time to work strictly on skill building. This has been a problem in the past due to course sequencing which had OIS students taking BUSI 104 in the first semester and BUSI 105 in the second semester. Since they use the same drill book in both course, students found it repetitive and boring. Beginning next semester, students take either BUSI 100 or BUSI 105 in the fall and all students take BUSI 104 in the winter semester. This should alleviate the problem.

We have to articulate between BUSI 104 and BUSI 133 in the winter semester. The sequence for BUSI 104 will be letters, memos, minutes, itineraries,

tables, reports. The sequence for BUSI 133 then, will be senior word processing, desktop publishing, machine transcription, office applications.

The sophistication of software has called into question the need for high-speed, straight copy keyboarding. Scanners, voice-input and other sophisticated input devices may make this skill obsolete. The question arises, what is an acceptable keyboarding speed? Since documents in a word processing, desktop publishing environment are entered once and then revised many times, do we need people who type 60 or 70 words per minute? The way we have structured our program, OIS students are required to take advanced keyboarding. Is this appropriate for a more management oriented stream? Perhaps we should require the OIA students to have one level of keyboarding as a prerequisite to the program and take BUSI 105, and require the OIS students to take BUSI 100. Which of these graduates is more likely to need advanced keyboarding skill? This is one area we need to look at.

BUSI 106 Solving Business Problems

4 HOURS

This course provides students with the tools to solve common business problems including mathematics calculations involving mark-ups, mark-downs, and ratios, estimations, efficient use of calculators, and an introduction to computerized accounting using ACCPAC Simply.

Common employer complaints of computational skills deficiencies are those evidenced by miscalculation of decimals and fractions, resulting in expensive production errors. According to Carnevale, et al. (1990) the skills that underlie an employee's ability to perform mathematical tasks successfully includes (Cornell

Institute for Occupational Education, 1980, in Carnevale, et al., 1990):
quantification, computation, measurement and estimation, problem solving, and
comprehension. See APPENDIX FOUR (page 138). Because skills in computation
are of strategic relevance in the workplace (Henry and Raymond, 1983; King-Fitch,
1985, in Carnevale, et al., 1990), they like reading, should be taught contextually,
that is, in a way that reflect their on-the-job use. A report prepared for the Indiana
State Board of Vocational and Technical Education (Kloosterman and Gillie, 1987,
1988, in Carnevale, et al., p114) states:

"...demonstrates the need for instructional materials that provide
instruction in the basic skill of problem solving/logical thinking
in ways that promote transfer of knowledge about one problem
to a new problem. . .incorporating in curricula for teaching basic
skills in workplace mathematics a step-by-step problem-solving
model that uses brainstorming, activates learner's prior
knowledge and involves group cooperation. taught contextually
as applied skills for the workplace. Even entry-level job tasks
require the application of complex clusters of mathematical
skills"

In the past, this course gave students a basic math skills review, taught them
how to use a calculator including memory functions, and a spreadsheet application
to complete a payroll. This year, we added a computerized accounting application
in which students converted the practice sets completed in their accounting course
to ACCPAC Simply. The reasoning behind this was to add the computerized
accounting component to our program in a course where all office technology
students could take it. Since ACCT 111, a business administration course, is taken
by students in the OIS stream, these students missed out on the computerized
accounting package. Based on the survey of computer usage APPENDIX THREE
(page 133, 136), we felt it was imperative for students to have some experience in
this area.

We need a greater emphasis on computation skills and problem solving with business applications, but have not found an acceptable text book for business math applications. Students are weak in ratios, percentages, and problem-solving. These areas span every course in the program, making it essential for all instructors to reinforce these skills.

BUSI 110 Basic Accounting

5 HOURS

Students learn basic accounting concepts in this course. The accounting cycle including journalizing transactions, work sheets and preparation of statements, handling cash, specialized ledgers and journals, accounting for a merchandising concern, GST, and payroll are covered. Students complete a manual practice set.

This is a terminal course. Students wishing to take additional accounting courses should take ACCT 111. Students who take this course get a solid grounding in the basic accounting cycle. Since the course covers only eight chapters, we go at a slower pace and do more practice exercises. The manual accounting set gives students the opportunity to work with source documents. Learning is reinforced and transferred by using the same practice set in a computerized accounting environment.

BUSI 114 Introduction to Business And Its Environment

3 HOURS

Students are introduced to:

1. the nature of business and business systems including production, marketing, accounting, finance, etc.
2. the principles of management and decision making of
 - a. people

- i. organizational behaviour issues, productivity issues, managing staff--selection, supervision, training, evaluating
- b. jobs
 - i. job analysis, labour relations, work measurement and work standards
- c. environment issues
 - i. international competitiveness, macro/micro economic issues, globalization, effect of automation on business, government, ethics, law.

The lecture portion of the class is taught using the team learning concept developed by Michaelsen (1992).

Students develop a sense of how the organization works and how the actions of each individual affect organizational and strategic objectives.

Organizations are a tapestry of explicit and implicit power structures. Explicit leadership is conferred by title and authority while implicit leadership is a delicately woven image achieved by cultivating the respect of peers and projecting a sense of reliability, goal orientation, and vision. Basic training in organizational effectiveness is geared toward providing students with an understanding of what organizations are, why they exist, and how one can navigate the complex social waters of varying types of organizations. Students are exposed to organizational culture. its goals, values, culture and traditional modes of operations. This understanding is developed through the use of case studies and team learning group work.

BUSI 131 - Introductory Office Procedures

3 HOURS

This course provides students with an overview of the various functions carried out in the manual/automated office. Students learn an information processing systems approach to office work--IPSOCD input, processing, storage,

output, communications, distribution. Manual and automated approaches are discussed and, where appropriate, applied to these functions. Upon completion, students will be expected to understand the effect of office automation on "white collar" productivity and on the business organization. This is a cornerstone course which integrates skills and attitudes from other courses. The what, how and why of the office. The lecture portion of the class is taught using the team learning concept developed by Michaelsen (1992).

Students are expected to set priorities, a practical form of problem-solving. This is accomplished through team learning application-oriented assignments which require students to plan and organize activities, as well as, through activities in the BTA. Students learn to use electronic calendaring and scheduling. In addition, students complete a filing practice set which includes manual and electronic filing using dBase IV. In this class, students learn disk management and backup routines as they apply in the office. Also, students have electronic mail boxes and learn to send and receive messages and manage their mail boxes.

This course teaches concrete skills, filing, telephone, mail, time-management, banking, meetings, travel arrangements for the manual and the automated office. In addition, team learning provides a learning environment which stimulates problem solving, critical thinking, group processes and communication skills.

BUSI 133 Computerized Office Applications

5 HOURS

Students become proficient in all aspects of advanced document processing using DOS and WINDOWS software. Essential language skills (spelling, word

division, capitalization, punctuation, proper use of rules concerning numbers, abbreviations, vocabulary), proofreading and editing skills are emphasized. Projects to be completed include: newsletter; business forms; automated document preparation using macros, styles, document summaries; list management using merges; transcribing documents; annual and financial reports.

This is an advanced micro computer application course which is very practical in nature. In this class students learn to use advanced word processing to functions to automate document processing, desktop publishing with WordPerfect 5.1/5.2 and Express Publisher, forms design and creation with WordPerfect 5.1/5.2, Lotus WYSIWYG, ProDesign, dBase IV, report design and generation with WordPerfect 5.1/5.2, dBase IV, Quattro Pro and PARADOX for Windows, and database management with Lotus 123.

This course dovetails with BUSI 104, BUSI 131, MICO 191, MICO 193. The focus here is quality production of error-free documents. Language and proofreading skills along with layout skills are required for successful completion of this course. Document layout and preparation is approached from a problem-solving point of view. Efficiency and effectiveness are stressed in all stage of creation, from the original idea to the final product.

BUSI 151 Business Communications

5 HOURS

Business communications is a common course for business administration and office technology students. Students learn to apply the theory and principles of effective business writing to a wide variety of business problems while upgrading their current writing skills. Students are required to use current technology and

proper formats for their documents. A key element of this course is the Comm-Write simulation which gives students the opportunity to apply principles and experience working in teams to produce written correspondence.

The quality of letters, memoranda, progress reports, work orders, requisitions, recommendations, and instructions are regarded as an indicator of the overall quality of an employee's work. More than 50 percent of the businesses responding to the CPR report (1983 in Carnevale, et al., 1990, p22), identified writing skill deficiencies in secretarial, "skilled," managerial, supervisory, and bookkeeping personnel. Communicating orally and listening intelligently are the basic communication skills needed in the office. Those who can express their ideas orally and who understand verbal instructions make fewer mistakes, adjust more easily to change, and more readily absorb new ideas than those who do not (The Productivity Paradox, 1988 in Carnevale, et al., 1990). These skills contribute to an employee's success in: interviewing, making presentations at or conducting meetings, negotiating and resolving conflict, selling, leading, being assertive, teaching or coaching others, working in a team, giving supervisors feedback about conversations with customers, and retraining.

BUSI 233 Career Experience (Proposed Required Course)

3 HOURS

This course provides students with a two-week practical on-the-job experience that complements students' studies at College. Career experience gives students an understanding of the importance of developing acceptable work habits, good grooming, and the need for self-discipline. Students learn to deal with others in a professional, business-like manner and to recognize the need for positive

attitudes in working with others. Students have an opportunity to observe the organization of a business and the relationships between employer and employee. At the present time this is an optional course.

The major assignment in this course is an in-depth, formal report. See APPENDIX FIVE (page 140, 156) for course outline, assignments. This assignment requires students to observe all aspects of their work place. It does not, however, ask them to analyze or synthesize their experience.

An alternate assignment would be keeping a journal, whereby students address what they like and dislike about the work they are assigned; what they have learned from their work; why they think tasks are divided the way they are; who decides how the workplace is organized and what the reasons might be for those decisions; and if they can think of any way they would prefer work to be performed or distributed; and analyze their work sites on policies regarding health and safety, automation, wages and benefits, and job rights. Students could be encouraged to report on those workplace factors associated with stress: the environment (noise, lighting, temperature, skin irritants, ventilation, furniture design, space); job design (work pace, control over time and work, specialization and routinization of tasks); employer/employee relations (level of respect, support of boss, number of bosses, grievance procedures); and socio-economic factors (pay, advancement opportunities, job security, incidents of discrimination, child care facilities). Knowledge of these factors is an essential first step in empowering students to safeguard their physical and psychological well being (Valli, 1986, p207). Having student analyze their own places of work in relation to their educative value and other pre-specified criteria can help them gain insight into

variations in working conditions, change processes, and controversial issues around which women workers have begun to organize. (Valli, 1986).

Another possibility is to have students prepare a training and procedures manual for their workplace. It would include a history of the company, company benefits, working conditions (breaks, facilities, etc.), a floor plan, job description (title, work performed, qualifications, salary, equipment), and promotional materials. In addition, students could develop a list of the procedures and tasks they were responsible for, to be used to train new employees. These manuals would be reviewed by the supervisor (Valli, 1986). Completing this type of assignment would make students analyze the tasks that they were required to complete.

Including this as a required course in the one-year program does not seem to be possible unless we go to a required spring session. There are difficulties getting students to take the course. They have to pay for an additional course and it runs into May when they could be looking for jobs. Students have excellent success in obtaining employment as a result of the career experience course. All we can do is continue to encourage them to take the course.

BUSI 250 Oral Communications

3 HOURS

This course helps students develop self-confidence and competence in making individual and group presentations using visual aids where appropriate. In addition, students improve their listening skills through the process of peer evaluations. Videotaping is used as an evaluation tool.

Students gain self-confidence and self-esteem from this course. They are able to express themselves more clearly and are able to speak in front of groups.

This is a business administration course which means we have little input in how it is structured. Students give impromptu speeches, persuasion speeches, explaining speeches, speeches with demonstrations, etc. More of a focus on business type situations such as presenting motions at a meeting, presenting business plans, describing business results, etc. would be productive.

BUSI 267 Office Management (Advanced Office Procedures)

5 HOURS

Students gain an understanding of the procedures and processes for managing in the office including: the physical environment (location, ergonomics, furniture and fixtures); office systems and organization (work flows, forms and records management, office automation, office communications); interpersonal relationships in the office (human rights, conflict management, employer expectations); and job search techniques (resumes, interviewing, career planning). The lecture portion of the class is taught using the team learning concept developed by Michaelsen (1992). Team learning gives students the opportunity to practice interpersonal skills, while learning management concepts for the office. The focus of this course is the employee in the office setting.

We will be undertaking a complete review of this course in the coming year. This course was added to the program when we instituted the Professional Secretary stream. Since that time, we have changed the focus of the program from a skill orientation to more emphasis on communications and interpersonal relations skills. This course may be revised to reflect this change.

This is an introductory course in micro computer applications for the office which includes computer literacy and hands-on experience with DOS, WordPerfect, Lotus123, dBaseIV. Students become conversant with the terminology and basic concepts of micro computer technology. Students learn to use applications software to perform basic tasks.

Currently this class is one hour lecture and three hours lab. See also Lab Issues (page 82). The lecture portion of the class is taught using the team learning concept developed by Michaelsen (1992). In this course, students learn how to use various types of application software packages. This is a feeder course for BUSI 133, BUSI 106, MICO 193.

Every attempt is made to get students to think about how the programs work, rather than just memorize key strokes. Many of the textbooks that are being published today are using the case study model for chapter exercises. In keeping with the philosophy that students need to learn concepts and not keystrokes, I have always had open book exams in the lab portion of this class. Increasingly sophisticated users are not challenged by the course material. We either need to let these students challenge this course, or beef up the course. This problem has been exacerbated by changing assignment expectations due to lack of lab access. I anticipate this will become more of a problem as the school systems adopts the CTS curriculum, and more and more students have their own computers at home.

Students work with DOS and WINDOWS based software to build on the skills and knowledge acquired in Mico 191, using the tools (applications) to complete tasks in their course work and/or actual business applications. In this project oriented course, students work through a lab book and complete relevant projects to demonstrate mastery of the applications.

This is a business administration course which is meant to give business students practical experience in applying technology to business problems. We are dropping this course from the office technology program next fall because it overlaps with BUSI 106, BUSI 131, BUSI 133.

See APPENDIX SEVEN (page 154, 165), for course learning objectives for all courses.

TEACHING STRATEGIES

BUSI 104/133

- ✓ Proofreading--teach techniques. Mark assignments for format, hand back for revision, then marked for content.
- ✓ word processing--WP5.1 and WP5.2 taught for transferability of learning.
- ✓ work experience in area--take in work from other students, do practical assignments
- ✓ proofreading each others and their own assignments
- ✓ work in teams to plan, layout and prepare desk top publishing documents
- ✓ work in teams to create, assemble, edit and print large documents using master document function

- BUSI 131/267
- ✓ use a workshop approach (2 to 3 hours) for soft skills--initiative, responsibility, professionalism, professional development. Concepts are then incorporated into all classes. Guest speakers and/or instructors
 - ✓ PC TOOLS/WINDOWS--time management, electronic mail, calendar, scheduler, calendar
 - ✓ work in teams to complete application-oriented problems
 - ✓ simulations and filing practice set (electronic/manual).
 - ✓ machine transcription--formatting with styles
 - ✓ use backup routines for backing up data
- BUSI 106
- ✓ time sheets, petty cash, vouchers, bank reconciliations
 - ✓ business arithmetic (estimating)
 - ✓ convert manual accounting set to ACCPAC Simply
- BTA
- ✓ student's group puts on workshops for students--Career Planning. A one day event with displays and speakers, completely organized by the students.
 - ✓ developing a mentoring program for students with people from industry--builds confidence, provides a contact person, validates the program.
 - ✓ social functions, student conference--PD Days for students--speakers, luncheon, fashion show with faculty and students, end-of-semester dinner, T-shirts.
 - ✓ fund raising, graduation, fashion show, speakers.
 - ✓ professional development--job search, dress, telephone skills

- Relationship-building exercises See APPENDIX TWO (page 127)
- BUSI 110 manual accounting set then on ACCPAC Simply inBUSI 106
- BUSI 233 report on career experience (2 weeks)--sit down with students and evaluate, meet with employers, students find their own placement
- MICO 191/193 DOS have students draw a representation of dos activities
- top-down, bottom-up learning. get them to think about how they learn. Talk about change from beginning to end of semester
- work in teams to learn theory portion of course
- read and critique magazine or journal articles, use word processing functions to create reports

TEACHING/LEARNING TACTICS

The (Office) Business Technology Association has been a mainstay of the office technology program in Brooks from the beginning. Over the years, it has grown in importance as quality management and the team concept has taken over in the work place. For the same reason that BTA is appropriate, team learning has proven to be an excellent way structure several of the courses in the program. The Adopt-A-Student program and the Advisory Committee both provide linkages with the local business community to provide input for our program and to provide students with contacts in the community.

BUSINESS TECHNOLOGY ASSOCIATION

Rationale

Skills must be taught within the context of the environment in which the skills will be used. One of the ways in which we try to accomplish this is by structuring the program, inasmuch as possible, to simulate an office environment. This requires a mixture of individual and group work throughout the year-long program. At Brooks we have developed a unique opportunity that provides students with a an environment where they are expected to set goals and work together to achieve those goals, the Business Technology Association (BTA).

Part of the office procedures class is the Business Technology Association which all students participate in. They elect a slate of officers and committees to carry on the functions of the association. Each student in the class is either an officer or a committee member. See Constitution and Bylaws, APPENDIX EIGHT (page 164) The original intention of the association was to teach students about meetings, how to arrange them, how to conduct them and how to take minutes. From my point of view the association does teach the skill area very well, but its value resides in the cohesive effect it has on the class.

A problem with one-year programs is that students are not together long enough to form relationships and also not at the school long enough to get really involved. This enforced group supplies a vehicle for students to form relationships with each other and fosters an implicit involvement in the school. Because it has a social context, students must learn to work with each other to achieve their goals and, through their experiences, develop acceptable work ethics. Combined with an emphasis on ethical behaviour which is promoted by all instructors at the college,

this component of the program is the glue which binds the practical skills with social responsibility leading to personal satisfaction.

When I began teaching at the college the association was primarily a social club. In the past three years we have expanded the mandate to include a bi-monthly newsletter with input from the entire campus and increased the fund raising activities of the association to enable students to set up a scholarship fund for business administration and office technology students. All functions are carried out through independent committees headed by a chairperson who is responsible for reporting to the main body at the monthly meeting. Committees are reorganized each semester, thereby allowing students a variety of experiences throughout the year.

One of our goals for the BTA is to assist students in developing leadership skills through their participation in committees. The functions of leadership include stating basic values, announcing goals, organizing resources, reducing tensions between individuals, creating coalitions, coalescing the work force, and encouraging better performance.

It is truly amazing to see the growth and development of the students during the year. One can actually monitor the evolution from the individual to the collective as students begin to work together as a team to achieve the goals they have set for themselves. By participating in the association they not only develop individually but they make a real contribution to the school as a whole.

Analysis and Proposed Changes

Last year we expanded the club to include business administration students. This increased membership to approximately 35-40 members. Instructors serve as advisors and resources to the committees and the club as a whole. The Business Technology Association (BTA) had a successful first year. They raised slightly over three thousand dollars, published a newsletter which was distributed throughout the college and to selected schools and businesses in the community, hosted a business seminar, produced a resume book and distributed it to businesses in the area, awarded scholarships to a business administration student and an office technology student, co-sponsored a project for improving accessibility for the disabled, and held a year-end party for the organization.

Participation in the club helps students to develop leadership skills through serving as executive or committee chairs; improve problem-solving and creative thinking capabilities through contributing to committees; enhance organizational and planning skills in carrying out various functions and activities; cultivate team work skills through committee work and interaction with the other committees. In addition, by reaching out to the local business community, students raise their own profiles and the profile of the business program at the college.

Although the BTA had a successful year in 1992-93, we are struggling in 1993-94 due to a variety of factors. This biggest factor appears to be the makeup of the club. Last year approximately one third of the membership were mature students, many who had been at the college for one year or more. This resulted in greater motivation and participation. This year, our members are primarily recent high school graduates who lack the maturity and the motivation to participate. Last

year we ran the program through the common communications classes and held meeting during class time. This semester we are running the program through separate business administration and office technology classes and holding meetings during lunch hours. This year, the group has not achieved cohesiveness and a sense of purpose. Experience has shown that it is imperative to establish direction, goals, and objectives in the first month of classes. Committees must work on team building skills, decide on projects, activities required to achieve objectives, and decide on the time commitment required to reach goals. Students need to define the qualities of contributing group members. We need to help students clarify why they are in the business program and we need to clarify the way in which the BTA can help students meet their goals--to gain employment.

While the program was running solely through the office technology program I was able to guide the process in several ways and in several classes. The program is now directed by two instructors, myself and a business administration instructor. This has made it difficult to maintain a sense of momentum since issues are not now raised at the level of the classroom, but, rather only at bi-weekly meetings. For the past two years, we (the instructors) have had minimal involvement at the executive level of the club. Other contributing factors are: missing feedback process; lack of student input in establishing convention and mores; committees are too large (six to eight), more than four to five and group processes suffer.

In an attempt to do some team building prior to forming committees, we held elections at beginning of October and spent the first two weeks establishing goals, objectives, priorities and talking about group dynamics. Next year I plan to

do this stage separately for the office technology students and the business administration students. After two weeks we will meet, form committees, work in the committees for two weeks developing goals, objectives and commitment contracts that will define how each committee will fulfil its mandate. These contracts will list the goals for each member and for the group and will be used for self-evaluation purposes. Then the committees can choose their chairs. The executive council will be formed after elections are held and will consist of myself, the other instructor, the president, vice president, secretary and treasurer (Johnson & Johnson, 1987).

Tentative Structure

Learning is fostered by structuring the interactions of the group (Knowles, 1987). The first meeting serves the functions of orientation, climate setting, and relationship building. Techniques include meeting members at the door, distributing index cards for name and background information, having students introduce themselves, handing out a course syllabus for the association which defines objectives, and promotional materials. At the initial meeting we give an overview of the association and talk about last year's achievements.

The second week we review the first meeting and diagnose needs for achieving objectives. Students use each other as consultants, so we talk about the skills of consultation. At this time we form triads and come up with an overall picture of the distribution of skills and abilities among members of class. Committees are composed of groups of five to six by pooling skills and abilities

into a frequency distribution in each triad and building a master frequency distribution for the group.

At the next meeting we form into committees and construct first drafts of commitment contracts, and plans for the semester. Each committee will present its goals, activities required to meet goals. As a group we then combine goals and find interrelationships and linkages. The group decides on projects to be undertaken for the semester. It is essential to be realistic. Ideas could include year end party, scholarships, fund raising for activities, seminars, resume book, sandwich series speakers--PSI, CPS, invite local secretaries for lunch, fashion show in conjunction with seminar. During the third week, we form triads for consultation skill practice and test the adequacy of commitment contracts:

1. are the objectives clear?
2. does it describe what learner is undertaking to contribute?
3. are they stated in a measurable way?
4. do different levels of commitment provide for a reasonable differentiation between grade levels?
5. how are objectives going to be achieved?
6. have they indicated criteria and means for validating achievement in a clear, relevant manner that is able to be applied?. Could other criteria be considered?
7. do the means proposed for judging seem appropriate, feasible and convincing? Could other means be considered?

Students revise their contracts and identify the resources they will need to achieve their objectives. Weeks four to eleven involve team work. Weeks twelve and thirteen are used for presentations and analysis of the experience (Knowles, 1987).

Evaluation

Marks (10 percent) for participation in the BTA, are given through BUSI 131 AND BUSI 133 in the office technology program. These marks are arrived at through self- and peer-evaluation. This is a less than satisfactory process, as students generally do not like giving low marks to one another and consequently, give a standard mark to everyone in the committee regardless of their contribution. The only ones who get low marks are the no shows. Also, self-evaluation tends to give skewed results for the same reason. I am considering giving a mark of 15 percent for BTA participation and not tying it to a specific course, but rather tying it to the type of product or results that the mark is based on. By this I mean, that BTA marks will be given for team work skills, based on completion of and testing on a team work module in the first two weeks of classes, planning and organizational skills based on personal and group goals and objectives for the year, computer skills as evidenced by work done on the newsletter, preparation of reports and minutes for meetings, creation of posters and displays for promotional materials, etc., interpersonal skills based upon peer evaluation, and finally analysis and synthesis skills based on individual journal entries. If each skill area is worth 5 percent, students can then choose which ones they will complete and hand in for grading to obtain their 15 percent. This mark would then be assigned to which ever class the skill applies to as a bonus. Students will contract for their 15 percent bonus, failure to hand in products will result in a loss of 15 percent from whatever courses they choose to hand in projects for. I think this method would improve the quality of the mark and also give some incentive for all students to actually produce and participate. We would have to ensure that there is one project for each

course in the program and also that there are applicable, relevant projects for each committee.

TEAM LEARNING

Students must acquire the conceptual problem solving and interpersonal skills which will allow them to use basic information to make business decisions, to be able to coordinate with and supervise the work of others. Michaelsen's (1992) team learning concept is a structured approach to using groups in higher education. The basics of his method are: (1) pre-instructional mini tests; (2) permanent, heterogenous work groups; (3) reduced reliance on lectures; and, (4) grading based on a combination of individual performance, group performance and peer evaluation. This method has been successfully used in organizational behaviour, accounting, business policy, computers and statistics classes. Students complete homework assignments to become familiar with basic concepts. The mini tests and subsequent application-oriented assignments will provide them with information on understanding the concepts and help instructors to identify topics that require clarification. Mini tests are given at the beginning of each major topic area, between six and twelve per term, the first one during the second class. Course material is learned through individual study, individual exam, group exam (peer tutoring), focused restudy, and preparation of written appeals (peer tutoring), focused corrective instruction by instructor, application-oriented activities, projects and exams. Mini tests give students reasons to keep up with the class.

Individuals and the class receive immediate feedback on how well they are doing, experience a sense of accomplishment from group exam, are rewarded for

work done outside the class, learn that group discussion can be a reliable source of information, and develop relationships with group members. This system increases student preparation because each member's preparation is apparent to their peers. Individual preparation determines the quality of the group's performance. Much of the feedback and corrective instruction comes from peers and occurs while working on group exams, additional feedback and corrective instruction comes from scoring of exam, focused restudy during preparation of appeals, and subsequent comments by the instructor.

Team learning improves instructors' performance by providing information on what concepts remain unclear but also the exact nature of student's misunderstandings. By carefully designing questions and listening to group discussions, the instructor can focus on students' learning needs and avoid talking over their heads.

We used team learning in BUSI 133, BUSI 191, BUSI 114, BUSI 267 this term. I had a tendency not to address problems areas during the class, rather gave the mini test, then did the application oriented problem. Another difficult area was in preparing appropriate mini test questions and application-oriented problems. We attended a work shop with Dr. Michaelsen at the end of August and implemented his system in September, so there was not much time for preparations.

ADOPT-A-STUDENT PROGRAM

Research supports the idea of a student-mentor program (Barnes, Cheatwood, 1989; Roueche, 1985; Carson, Demming, 1990). A mentor can serve as a role model, coach, colleague, and friend. The relationship is symbiotic, it gives

students resources for answering questions about practical information on career choice and job opportunities, assistance with work-related assignments, suggests resource materials where appropriate, and provides guidance and suggestions about "real" work world. Effective mentors must have the following characteristics: a desire to help students develop work-related skills and knowledge; sound communication skills; an ability to establish rapport with others; an ability to organize and plan effectively; a willingness to form a relationship with a student; the desire to participate in the program; the time to cultivate a mentor relationship; the ability to garner confidence and respect; and the ability to motivate, counsel and influence the behaviour of the student.

The student-mentor program gives the post-secondary institution a vehicle for establishing a support system by strengthening communications between the work world and the education system. It is important to schedule an orientation meeting with mentors if possible. They have volunteered for the project and feel that their input is important. Get together informally to go over policies, procedures, and the philosophy of the program. Make them welcome, serve coffee, juice and donuts, give them the opportunity to ask questions, exchange phone numbers and appropriate times for further meetings. Ask them to write a short narrative detailing their experiences and their opinions of the mentoring process. Discuss the ways in which they can support their student by sharing ideas, offering resources and hints for professional growth, providing copies of forms, resources lists, etc. A summary of the steps to be followed in the program are :

- | | |
|----------|--|
| Step One | Mentor/Student Selection and Orientation |
| Step Two | Initial Student Observation |

Step Three	Ongoing Collaboration
Step Four	Follow-up Student Observation
Step Five	Final Review

The following contacts should be established:

Business contact	letter, mentor volunteer form
Mentor contact	letter, information package, orientation meeting to acquaint with philosophy and procedures of the Program and the backgrounds of assigned students.
Student contact	student form, assign mentor, phone call to set up first meeting possibly take resume, set up day for visit
Business contact	thank you letter
Mentor contact	student thank you note, college thank you note. Mentor appreciation lunch, present certificates

See APPENDIX NINE (page 179) for goals, responsibilities, forms, letters and evaluation instruments used in this program.

ADVISORY COMMITTEES

Post-secondary business instructors must find ways to have more contact with the companies that will be hiring their students in order to develop an understanding of present and future employer requirements and specifications (Steenstra, Hogg, 1990, p189-90). The advisory committee at Brooks campus, Business Administration and Office Technology Advisory Committee, is made up of local business people, selected by the Brooks business department, with representation in each of the following areas: management, marketing, accounting, microcomputers, office technology, government, education, banking, program graduate. The committee meets twice a year. Last year was the first year for the

committee. The Business department head is an ad-hoc member and administration is welcome to attend meetings.

In organizing the advisory committee meeting we have kept the following ideas in mind:

1. watch timing of meetings--these are busy people, serve a light meal but don't take up a lot of time eating
2. invite faculty to come in and discuss their concerns and their courses
3. send agenda out one week prior to the meeting
4. hosted by one of the industry committee members once a year
5. make them work--look at courses, outline, descriptions curriculum driven, input into programs, sessional selections, fund-raising for scholarships and capital, program name change, input for guest speakers
6. decisions made in department taken to committee at twice yearly meetings
7. input for questionnaires used in program review
8. formal meeting then break into groups to discuss topics such as keyboarding standards, etc

The Brooks Campus Business Administration and Office Technology

Advisory Committee was formed last year. We had two meetings, one in the fall semester and one in the winter semester. Committee members reviewed changes to the Office Technology program and gave their approval to the work we had completed.

FUTURE DIRECTIONS

Today more than ever, post-secondary institutions need to reach out to the work place and form bridges that will enable communication to flow in both directions. We need to build relationships with business, industry and government

in order to remain key players in the education and training of students for the work force they will be entering. Some ideas for accomplishing this follow.

1. What type of student should we be encouraging to go into office technology? Traditionally, the Myers Briggs personality profile of a secretary, was one who fit the hierarchical, highly structured organization. Does this personality type have the predilections which will enable them to work in the organizations of today?
2. The BTA and ADOPT-A-STUDENT programs illustrate the dynamic nature of the process of teaching. These non-traditional methods align very well with the demands of the work place by providing vehicles for students to learn to work in teams and to interface with the work world.
3. An untapped source for fleshing out business classes are retired business people who may be willing to act as advisors, come to the college as student for a day, act as a resource (Boyer, 1994; Meanwell, Barrington, 1993). This could be an excellent resource for guest speakers and an expansion to the student-mentor program.
4. We currently offer a two-year Business Administration/Office Technology diploma for those students who complete both one-year diplomas. In the past, this has been a popular choice in Brooks because it is the only way to get a two-year diploma at our college. Due to the funding cutbacks we have tended to adopt a holding pattern with this program. One possibility for change is to offer a Professional Secretary two-year diploma with either microcomputer, accounting or management major. This program would prepare students for the Certified Professional Secretary examinations. Students could take the professional secretary courses in the third semester: organizational behaviour, law, economics and fill out the remaining courses in their major area. This would be different than present business administration requirements. Perhaps more *communications courses*, *interpersonal relationship* courses and in the final semester a *work experience* course, work in the mornings and attend classes in the afternoons or combine it with a co-op program. Interpersonal communications help students develop group skills, handle conflict situations, and understand individual and cultural differences in communications techniques
5. One area of communications which is not covered well in our curriculum is listening skills. According to the research, one of the skill-deficiencies of workers is listening. Listening is a critical skill and should be taught (Glassmand and Farley, 1979; in Carnevale, et al., 1990).

"Workers spend 54.93 percent of their time listening: We use only 25 percent of our listening capacity. We use only 10 percent of our memory potential. We forget half of what we heard within eight hours. Eventually, we forget 95 percent of what we have heard unless cued by something later on. We distort what little we do remember (Nichols and Stevens, 1957; Barker 1971; in *Carnevale, et al., 1990*). Translated into an eight-hour workday: We spend four hours in listening activity. We hear for about two hours. We actually listen for about an hour. We understand thirty minutes of that hour. We believe only fifteen minutes' worth of what we listen to. We remember just under eight minutes' worth" (Elsea, 1986; in *Carnevale, et al., 1990, p27*).

An example of measurable poor listening costs is the typical business letter, which costs \$12 to \$15 in employee time and effort to create and mail. The majority of instructions in a business office are given verbally, either face to face or over the phone. Therefore, it is essential that employees can listen, understand and follow instructions given to them.

Equally important is the ability to give instructions and information to others. This oral communication skill can be fostered in classrooms through oral presentations and through team learning groups where students are involved in sharing their experience, expertise and insights.

6. Whenever people work together, successful interaction depends upon effective interpersonal skills, focused negotiation, and a sense of group purpose (teamwork). In today's workplace, the move toward participative decision making and problem solving inevitably increases the potential for disagreement, particularly when the primary work unit is a peer team with no single person taking on the role of decision maker (that is, supervisor or manager. Interpersonal skills training, developing cooperative skills, can improve students' ability to determine appropriate self-behaviour, cope with undesirable behaviour in others, absorb stress, deal with ambiguity, structure social interaction, share responsibility, and in general interact more easily with others. Students are taught negotiation skills which enable them to form constructive face-to-face relations that maintain harmony and build intergroup trust and to achieve flexibility and adaptability. This is crucial to the problem-solving process. The team approach is linked conclusively to higher productivity and product quality, as well as to increased quality of work life.
7. We must continue to upgrade our computer labs. In the short run, we are hoping to network the second lab and the faculty labs. We are beginning to explore the possibilities of forming partnerships with local companies, perhaps offering training in exchange for funding or partially funding a computer lab.
8. In order to keep our program viable, and to give our students the skills and abilities needed in the workplace, we need to maintain and build on the connections we now have with the community, the student-mentor program,

BTA community relations activities and the newsletter, and the advisor committee.

9. On-going review and analysis of the courses and the program with a view to developing a list of core competencies and skills which can be reviewed and revised by the advisory committee.
10. A commitment to the quality movement, in our expectations of student and ourselves.

1994-1995 Term

Due to falling enrolment in the program and reduced levels of funding from the government, we are, like all post-secondary institutions, grappling with ways to offer a more efficient program. One possibility would be to go to one stream rather than two streams. Another possibility is to change the way in which we offer the program. An open entry, open exit approach where courses are offered on a workshop or seminar type of basis may enable us to attract more students to the program. This would entail a modularized approach to courses, splitting them into discrete units and offering partial credits for each. At this point in time, I have included one scenario for next year's program. See APPENDIX ONE (page 126).

At the time of this revision, we have made the decision to go with one stream (Office Technology Certificate). We will continue to offer the two-year Business Administration Office Technology Diploma. We are updating our office technology lab in Brooks to 80386SX machines with 4 MB of RAM and will be expanding the program to include Microsoft Office software. Students will be thoroughly grounded in both DOS and WINDOWS applications software. During the summer, we will be revising the Business Technology Association as indicated in previous pages to provide more structure and accountability.

We will also ensure that the Adopt-A-Student program is fully operational in the fall semester. We are currently looking at dropping the beginning keyboarding class from the program. This would mean that students would have to have basic keyboarding skills to gain entrance to the program. We are looking at ways to include career experience as a required course, and are still grappling with various ways to do this.

Changes in the workplace demand constant revisions to our program. The loss of office jobs will effect the size of our program and the changing nature of those office jobs that remain will effect the nature of our program. As we move into the last half of the nineties and indeed into the last few years of the twentieth century, we remain committed to preparing our students for the environment and the culture of the workplace they will be entering.

OFFICE TECHNOLOGY PROPOSAL

Office Information Specialist	Office Information Assistant
Fall	Fall
BUSI 105	BUSI 100 or BUSI 105
BUSI 131	BUSI 131
BUSI 151	BUSI 151
ACCT 111*	BUSI 110*
MICO 191	MICO 191
Winter	Winter
BUSI 104	BUSI 104
BUSI 106	BUSI 106
BUSI 133	BUSI 133
BUSI 250	BUSI 250
BUSI 267	BUSI 267
BUSI 233	BUSI 233
BUSI 114	
* DIFFERENTIATES	* DIFFERENTIATES

RELATIONSHIP-BUILDING EXERCISES

Exercise I

learner-initiated 30 minutes

identify one other learner you expect to relate to in a learning project

each take fifteen minutes to share

(1) what you are--your work or student status, your background, what special resources you have that are relevant to this particular learning project

(2) who you are--a few things that make you different from any other person, such as aspirations, feelings, needs and values

Exercise II

teacher-initiated 45 minutes

ask learners to form groups of five or six in circles or around tables and take five minutes to share

(1) what you are; and

(2) who you are--one thing about you that will help others see you as a unique human being

before the group starts sharing, give the students the above information about yourself and role model doing this within the five minute time limit

after groups have completed their sharing ask for a spontaneous reporting to the following information

(1) did anyone learn anything about anyone else that was so unusual that others would be interested in knowing about it (be sure that permission is given by that person before it is reported), and

(2) were any special resources uncovered that others would like to know about?

Exercise III

teacher-initiated 30 minutes

ask each student to take a sheet of paper divide it into four equal boxes and write in a heading for each box as indicated below:

I am who

I am feeling what

I want help in

I can give help in

ask each learner to take two minutes to write in each box the words or phrases that the heading in the box stimulates in his mind by free association (indicate when the two minutes is up)

ask the students to form groups of five or six (in circles or around tables) and take three minutes per box to share the words or phrases in each box (indicate times)

after the groups have completed their sharing, ask for spontaneous reporting of

- (1) what unusual information about what and who was surfaced
- (2) what were the most frequent words in the feeling box
- (3) what kinds of resources were identified as being needed
- (4) what kinds of help were identified as being available

Exercise IV

teacher-initiated 30 minutes

ask each student to take a large sheet of newsprint, masking tape and a felt pen, find a space on the wall to hang the sheet, inscribe the form portrayed in Exercise III, and write

as each student finishes, walk around examining the sheets of other students and locate the students they identify with or wants to know more about

**BROOKS CAMPUS
MICROCOMPUTER SURVEY
October, 1993**

1. Are you currently using microcomputers in your business?
 - YES
 - NO
 - DON'T KNOW

2. What applications
3. are you currently using, or
4. would you use if you decided to start using microcomputers in your business?
 - Word Processing
 - Database
 - Spreadsheet
 - Accounting
 - Desktop Publishing
 - Financial
 - Other

5. What operating system
6. are you using now, or
7. would you use if you decided to start using microcomputers in your business?
 - DOS
 - WINDOWS
 - UNIX
 - DON'T KNOW

8. Which of the following software packages
- a. are you currently using, or
 - b. would you consider using in your business?

- WordPerfect 5.1
- WordPerfect Windows
- Word
- Word Windows
- Works
- Works Windows
- AmiPro Windows
- Lotus 123
- Lotus Windows
- Quattro Pro
- Quattro Pro Windows
- Excel
- Enable
- dBase
- Paradox
- Bedford
- ACCPAC
- Simply Accounting
- Other

**BROOKS CAMPUS
MICROCOMPUTER SURVEY
October 1993**

1~
2~
3~
4~

COMPANY PHONE: 5~

STUDENT'S NAME: _____

Call each of the businesses on your list during regular business hours. Use the following script:

GOOD MORNING/AFTERNOON, MAY I SPEAK TO YOUR OFFICE
MANAGER PLEASE?

MY NAME IS _____. I AM A STUDENT IN THE OFFICE TECHNOLOGY
PROGRAM AT BROOKS CAMPUS.

WE ARE CONDUCTING A SHORT TELEPHONE INTERVIEW TO
DETERMINE COMPUTER USAGE IN THE LOCAL BUSINESS COMMUNITY.

CAN YOU SPARE A FEW MINUTES TO ANSWER SOME QUESTIONS?

When you have completed the survey, thank them for their time and let them know that the results of the survey will be reported in the Brooks Bulletin, Campus Corner.

DATE CALLED:

TIME CALLED:

CONTACT PERSON:

CHANGES TO ADDRESS, IF ANY:

COMMENTS:

**BROOKS CAMPUS
MICROCOMPUTER SURVEY SUMMARY
NOVEMBER, 1993**

The survey was conducted by telephone from October 8 to October 27, 1994. The following is a summarization of the findings:

229 surveys were prepared, 39 companies were not contacted, 190 companies were contacted.

Of the 190 companies contacted, 70% (133) are using computers in their businesses, 30% (57) companies are not using computers in their businesses.

Those surveyed indicated the following applications usage:

WORD PROCESSING	68%
DATABASE	27%
SPREADSHEET	45%
ACCOUNTING	63%
DESKTOP PUBLISHING	9%
FINANCIAL	18%

Those surveyed indicated the following operating system usage:

DOS	72%
WINDOWS	18%
OTHER	*20%

*Mainly UNIX and ZENIX

Those surveyed indicated the following application package usage:

WORDPERFECT 5.1	43%
LOTUS 123	35%
DBASE	9%
BEDFORD	24%
ACCPAC/(SIMPLY ACCOUNTING)	17%
OTHER	*50%

*WINDOWS APPLICATIONS, EIGHT-IN-ONE

COMPUTATION SKILLS FOR THE WORKPLACE

quantification	read and write numbers, count and put numbers in sequence, recognizing size of number
computation	add, subtract, multiply and divide with single- and multiple-digit whole numbers, mixed numbers, fractions and decimals
measurement and estimation	take measurements of time, temperature, distance, length, volume, height, weight, velocity and speed and use these measures and report them correctly; or when exact measures are un-necessary or impractical, ability to apply simple techniques for estimating quantities, lengths, distances with a sense of the accuracy needed for the purpose
problem solving	employ the skills listed above as they are called for in situations outside the classroom by recognizing the problem, distinguishing between useful and irrelevant information, determining whether more information is needed, determining which mathematical steps should be used, setting up the problem in a workable format and computing the answer
comprehension	draw on knowledge and skill in the areas of equivalents (relating measures on different scales), organization of data (understanding the ways data are displayed and collecting and interpreting data), algebra (setting up and solving equations), and geometry (using principles and formulas)

**OFFICE TECHNOLOGY
BUSINESS 233 CAREER EXPERIENCE**

INSTRUCTOR: Pat Humphreys

**Office: 139
Phone: 362-1692**

COURSE OBJECTIVES

1. Gain practical on-the-job experience that will complement the student's studies at College.
2. Gain an understanding of the importance of developing acceptable work habits, good grooming, and the need for self-discipline.
3. Learn how to deal with others in a professional, business-like manner and to recognize the need for positive attitudes in working with others.
4. Learn about the organization of a business and the relationships between employer and employee.
5. Adjust to the "World of Work".

REQUIREMENTS

The student is responsible for:

1. Organizing and having an interview with contact person from company you will be working with.
2. Minimum of 70 hours work experience.
3. Daily time sheets and log (record of daily activities).
4. Organizing work experience luncheon and writing a letter of thanks to the employer.
5. Writing a report. (Details to be provided).

Work Experience Date 1994 04 16 - 1994 05 01

OFFICE TECHNOLOGY
BUSINESS 233 CAREER EXPERIENCE

ASSIGNMENT #1

1. Choose a work station and get it approved by me. Remember, this is on a first come, first choice basis. Fill out the work station selection form. **Due 1994 03 12.**
2. Type up the form letters on the word processor to be copied on letterhead stationery. **Due 1994 03 12.**
3. Prepare an error free resume using WordPerfect. (Make copies, you will need them later). Make sure you list the courses you have taken and are presently taking, as well as any work experience you have. **Due: 1994 03 16.**
4. Type up the reply form on a type writer or on the word processor (laser printer). **Due: 1994 03 16.**
5. Contact the approved work station either in person or by phone to see if they will accept you for the two-week work period. Make an appointment with your contact person to meet with them to have the agreement form signed. **Make sure you dress appropriately. Agreement Form Due: 1994 03 20.**
 - a. If they accept you, bring back the signed reply form.
 - b. If they do not accept you, choose another work station, get it approved by me and then go out to this work station and see if they will accept you.
6. Send out the thank you letter to your work station.

GOOD LUCK!

OFFICE TECHNOLOGY
BUSINESS 233 CAREER EXPERIENCE

ASSIGNMENT #2

Before the Interview

1. You will need to set up a mutually convenient time with your interviewer between 03 16 and 03 27. You will also need to book a room (see Judy at the office), book the VCR and camera (see the library), plus make sure your partner is available to run the camera. Make sure you allow yourself enough time for the interview, replaying the tape and discussion.
2. Pick up copies of Interview Evaluation Checklists and Memo from your instructor.
3. Give your interviewer a copy of the Memo and the Career Experience checklist before the interview begins.

After the Interview

1. Play back the video-tape and fill out the checklists.
2. All forms must be handed in to the instructor by 03 27.
3. Send the interviewer a thank you letter on Medicine Hat College, Brooks Campus stationery.

Evaluation

We will look at the two evaluation forms and see where and why there are discrepancies. The interview and the forms are worth 10% of your mark; if you strongly disagree with how the interviewer has evaluated your performance, we will then watch the video-tape and I will evaluate your performance.

MEMORANDUM

TO: Interviewers

FROM: Pat Humphreys
Office Technology

DATE: <Date of Interview>

SUBJECT: Mock Interviews

Please fill out the attached form evaluating the student's performance and drop it off at the main office on your way out after completing the interview. I appreciate your assistance.

Thank you for performing the mock interview with the student. It is people like yourself who are willing to assist in the educational process that help to make the college a "Community College".

***OFFICE TECHNOLOGY
BUSINESS 233
CAREER EXPERIENCE***

ASSIGNMENT #3

- I. As a group, you must organize the Career Experience Luncheon to be held on the last day of your placement, 1994 05 01. This will include:
 - A. Preparing invitations and reply cards.
 - B. Making arrangements for the dinner. This involves:
 1. Making arrangements at a restaurant that will facilitate presentation, etc.
 2. Arrange to have someone from the Brooks Bulletin present to take pictures for the paper.
 3. Typing up a program for the dinner.
 4. Choosing someone from the class to act as Master of Ceremonies, to say grace, to make the presentations, and to say a final thank you.
- II. Typing the certificates of appreciation to the individual businesses.
- III. Getting a thank you card to your individual work station.

Due 1994 04 08

**OFFICE TECHNOLOGY
BUSINESS 233
CAREER EXPERIENCE**

ASSIGNMENT #4

WORK STATION REPORT

Prepare a minimum ten page report on your experience at your work station. Answer all of the attached relevant questions in your report. Your report must be in proper format with title page, abstract, table of contents, a proper introduction, headings, side headings, conclusion, recommendations and appendices.

Begin the report with an introduction of the firm you are working for, including a brief history of the organization, the scope of its business and how it fits into the economic environment in Brooks. Include the requested charts as appendices. If possible obtain job descriptions and classifications, samples of letter formats, memorandums, and any other forms used.

In your conclusion discuss your personal observations: how you were accepted, what you liked best and least about your experience, what you learned about your strengths and weaknesses and the areas in which you need to improve. Were you better prepared in the skill area or in the human relations area or sufficiency prepared in both areas?

In your recommendations discuss your impressions of the "real" work environment as compared to your expectations. Did your year in the Office Technology program adequately prepare you for the job? If yes, which part of the program do you feel was most relevant and which least relevant? If no, what changes could be made to the program to ensure better preparation for the work environment?

Due 1994 05 01

QUESTIONS TO BE ANSWERED IN THE BODY OF THE REPORT

1. How does the work flow in this organization? (Draw a simple flow chart to illustrate) Where does the work come from? How many people are served by this operation? Who primarily?
2. Is there a procedures manual, office manual or desk manual to help new employees learn their duties? How are new employees trained?
3. Who coordinates and delegates the work? Who is his/her supervisor? Include an organization chart in your report.
4. What are the job classifications of personnel in the office? What qualifications must they have? What are their duties?
5. How much experience is required for an executive secretarial position; supervisory position? Why? How does a student best prepare for such a position?
6. How is mail distributed? Time-in and time-out deadlines. What is the procedure for internal and external mail?
7. What types of machines are in the office? What machines are office staff required to operate? Include typewriters, calculators, copiers, etc.
8. Is this an automated office, if so describe how office automation works in this office. Is there much use made of telegraph services, telex, fax machines? What is the procedure?
9. Is dictation required? Dictaphone? How often?
10. Do the employees in this organization exhibit good time management skill? How are desk and desk drawers organized for efficiency?
11. What types of filing systems are set up? What is the reason for the type of filing system? Are there any tickler files? Is there electronic filing and if so what kind of system is used?
12. What type of switchboard? Is there much telephone answering? How are long distance calls handled? Is there any record kept of long distance calls?

13. How is typing checked? How are corrections made in letters to be mailed out? How are corrections on carbons handled if carbon copies are used? How are corrections done on items to be duplicated? What are their standards of accuracy? (How many corrected errors are allowed?) What are their standards for speed? (Include samples of letter formats, memo formats and any other documents that you worked with.)
14. Is there much pressure work? Working under time constraints, last minute jobs, etc.
15. Does this firm use internally designed forms as well as externally designed forms? Do they rely on a supplier to design their forms? What about computerized forms and data entry screens?
16. How are supplies replenished? Who is responsible for supplies?
17. How is the Petty Cash Fund handled?
18. Is there any bookkeeping or record keeping required?
19. What is the office layout where you are working? Include a diagram in your report.
20. What characteristics would a person have to possess to do the job efficiently? Is this the job for you?
21. Is there anything special, new or unique about the work in this firm or the firm itself?

22. Indicate if you encountered any of the following "problem employees" at your work placement.

Family managers
Playboys/playgirls
Gossip mongers
Air polluters/halitosis
Air polluters/body odour
Smokers
Nibblers
Complainers
Antagonizers
Music lovers
Over-dressers
Wheeler dealers

23. Indicate the extent to which the "rules of good manners" are observed:

A - Seldom, B - About half the time,
C - Very often, D - Always

Rule 1. Be friendly
Rule 2. Be cooperative
Rule 3. Be responsible
Rule 4. Be considerate
Rule 5. Be happy

24. What is there in the work environment that helps you do your best work?

25. What is there in the work environment that hinders you from doing your best work.

**BROOKS CAMPUS, MEDICINE HAT COLLEGE
CAREER EXPERIENCE EVALUATION FORM**

Student _____

Rated by: _____

Date: _____

INSTRUCTIONS:

Read carefully the explanation of points to be considered in rating each of the qualifications listed below, keeping in mind the context of the two week placement. Place a check mark in the column which in your opinion most accurately describes the students performance.

- | | |
|----------------------|---------------------|
| <i>A - Superior</i> | <i>D - Average-</i> |
| <i>B - Very Good</i> | <i>E - Fair</i> |
| <i>C - Average+</i> | <i>F - Poor</i> |

1. JOB ATTITUDE

1.1 Cooperation - ability to get along with others:

- (A) Gets along well with others, is friendly and helpful.
- (B) Cooperates willingly, most times gets along with others.
- (C) Usually gets along with others.
- (D) Occasionally gets along with others.
- (E) Is difficult to handle.
- (F) Is antagonistic, pulls against rather than works with others.

Comments:

1..2 Initiative - tendency to go ahead:

- (A) *Is resourceful, looks for things to learn and do.*
- (B) *Is fairly resourceful, does well by herself.*
- (C) *Does routine work acceptably.*
- (D) *Does routine work with some prompting.*
- (E) *Takes very little initiative, requires urging.*
- (F) *Takes no initiative, has to be instructed repeatedly.*

Comments:

1..3 Courtesy:

- (A) *Is very courteous and very considerate of others.*
- (B) *Is considerate and courteous.*
- (C) *Is usually polite and sometimes courteous.*
- (D) *Is sometimes polite.*
- (E) *Is not particularly courteous in action or speech.*
- (F) *Has been discourteous to public and staff.*

Comments:

1..4 Attitude toward constructive criticism:

- (A) *Profits by suggestions, changes poor work habits.*
- (B) *Accepts criticism and tries to do better.*
- (C) *Listens to criticism, makes some improvement.*
- (D) *Seems to listen, very little improvement.*
- (E) *Doesn't pay attention to criticism.*
- (F) *Resents criticism.*

Comments:

2. JOB PERFORMANCE

2..1 Knowledge of Tasks:

- (A) *Knows work well and shows desire to learn more.*
- (B) *Understands work needs little or no supervision.*
- (C) *Understands work but requires supervision.*
- (D) *Has learned the necessary routine.*
- (E) *Has made an effort to learn the work.*
- (F) *Has made no effort to learn the work.*

Comments:

2..2 Accuracy of work:

- (A) *Does work of a consistently high quality.*
- (B) *Very seldom makes errors, good quality work.*
- (C) *Makes few errors, is careful thorough and neat.*
- (D) *Makes errors, shows average care, thoroughness, neatness.*
- (E) *Is frequently inaccurate and careless.*
- (F) *Inaccurate, careless, unsatisfactory work.*

Comments:

2..3 Work accomplished:

- (A) *Is fast and efficient, production well above average.*
- (B) *Works rapidly, production a little above average.*
- (C) *Works with ordinary speed, production about average.*
- (D) *Works with ordinary speed, production below average.*
- (E) *Works slowly, production below average.*
- (F) *Is very slow, production is unsatisfactory.*

Comments:

2..4 Work habits:

- (A) *Is industrious, concentrates very well.*
- (B) *Seldom wastes times, is reliable.*
- (C) *Occasionally wastes time, is usually reliable.*
- (D) *Occasionally wastes time, often unreliable.*
- (E) *Frequently wastes time, needs close supervision.*
- (F) *Habitually wastes time, needs constant supervision.*

Comments:

2..5 Working under pressure:

- (A) *Meets deadlines, copes extremely well.*
- (B) *Meets deadlines, copes with job-stress.*
- (C) *Meets deadlines, shows signs of stress.*
- (D) *Meets deadlines, stressed out.*
- (E) *Sometimes meets deadlines.*
- (F) *Never meets deadlines.*

Comments:

3. ATTENDANCE AND PUNCTUALITY

3.1 Tardy:

- (A) *Never tardy except for unavoidable emergencies.*
- (B) *Very seldom tardy.*
- (C) *Mostly punctual.*
- (D) *Punctuality could be improved.*
- (E) *Frequently tardy.*
- (F) *Too frequently tardy, unacceptable for continued employment.*

Comments:

4. SKILLS AND TRAINING

4.1 Office equipment and machines:

- (A) *Is proficient with all equipment and machines.*
- (B) *Is proficient with most equipment and machines.*
- (C) *Is able to use most equipment and machines.*
- (D) *Is able to use some equipment and machines.*
- (E) *Is unfamiliar with most equipment and machines.*
- (F) *Is unable to use equipment and machines.*

Comments:

4..2 Office automation skills:

- (A) *Is proficient with computers and telecommunications.*
- (B) *Is knowledgeable about computers and telecommunications.*
- (C) *Demonstrates previous exposure and learns quickly.*
- (D) *Demonstrates previous exposure but unable to use.*
- (E) *No prior knowledge, willing to learn.*
- (F) *No prior knowledge, unwilling to learn.*

Comments:

5. *In general, how satisfactory has this students' performance been?*

6. *How does this student compare with other employees you have hired with similar qualifications and experience?*

7. *What suggestions do you have that would help this student become a better employee?*

8. *Would you hire this student?*

9. *What suggestions do you have for Brooks Campus, Medicine Hat College that would better prepare the student for the work environment?*

Signature of Supervisor

Signature of Student

Date

Date

**I have read this appraisal
and have discussed it with
my supervisor.**

OFFICE TECHNOLOGY
COURSE LEARNING OBJECTIVES
February 23, 1994

BUSI 100

1. Type from sight (touch type) at a minimum of 30 words per minute with a minimum of one error per five minute timed writing
2. Assume good posture while demonstrating an ability to maintain correct finger control at the keyboard using the techniques of touch typewriting
3. Type the non-alphabetic keyboard with accuracy and speed
4. Apply rules and guidelines for the appropriate setup of displays, letters, tables, memos, and reports
5. Work at developing accuracy and gaining typing speed in producing mailable copy
6. Work to become a competent proofreader

BUSI 104

1. Review procedures for setting margins, tab stops, line spacing, corrections, auto return, etc.
2. Review proper posture and proper touch typing techniques
3. Review standard paper sizes
4. Keyboard both business and personal business letters
5. Letter placements
6. Keyboard different styles of letters in mailable form:
 - a. full block
 - b. modified block
 - c. modified block/indented paragraphs
 - d. simplified
 - e. personal business letter
7. Keyboard letters using the different punctuation styles:
 - a. no-point
 - b. two-point
 - c. full-point
8. Keyboard letters using special letter parts including:
 - a. attention line
 - b. subject line

- c. mailing notations
 - d. carbon copy notation
 - e. enclosure notation
 - f. company name
 - g. postscript
9. Demonstrate the proper way to fold letters and prepare labels for envelopes
10. Keyboard:
- a. two-page letters
 - b. letters with enumerations
 - c. letters with quotations
 - d. letters with side headings
11. review steps to centre a display
12. review display techniques:
- a. spreading a word
 - b. spreading a group of words
 - c. variable spacing between words
 - d. variable spacing between lines
 - e. block centring
 - f. pivoting
13. learn to centre tables horizontally and vertically.
14. set up tables with:
- a. titles
 - b. multi-line titles
 - c. subtitles
15. centre column headings:
- a. shorter than column width
 - b. longer than column width
 - c. shorter and longer than column width
16. set up the following types of tables:
- a. open
 - b. ruled
 - c. boxed
 - d. sideways
17. set up tables with special features:
- a. double-line underscore
 - b. footnotes
 - c. leaders
18. set up financial statements
19. develop a working knowledge of the use and format of various business forms

20. learn and apply the placement rules for typing interoffice memorandums on:
 - a. printed forms
 - b. reply forms
 - c. plain paper

21. keyboard in acceptable format:
 - a. news releases
 - b. agendas
 - c. minutes of meetings
 - d. itineraries

22. organize and keyboard information attractively on printed forms

23. learn to keyboard in proper format:
 - a. outlines
 - b. manuscript backing sheet
 - c. manuscripts (bound and unbound)
 - d. quoted and paraphrased information including footnotes and endnotes
 - e. bibliographies and parenthetical source notations
 - f. tables of contents
 - g. title pages
 - h. business reports; formal and informal

BUSI 110

1. Recognize and be able to indicate the effects of transactions on the accounting equation.
2. State the rule of debit and credit and use the rules to analyze transactions.
3. Record transactions in the General Journal.
4. Prepare and explain the use of a trial balance.
5. Explain why adjustments are required by the revenue recognition and matching principles and why the accrual basis of accounting is preferred to the cash basis.
6. Prepare adjusting entries for prepaid expenses, amortization, unearned revenues, accrued expenses and accrued revenues.
7. Prepare a classified balance sheet.
8. Prepare work sheets, closing entries, post-closing trial balances for a service business.
9. Prepare entries to record the declaration and payment of a dividend and the close the temporary accounts of a corporation.
10. List the steps in the accounting cycle in the order they are completed and perform each step.
11. Analyze and record transactions that involve the purchase and resale of merchandise.

12. Calculate the cost of goods sold and the gross profits from sales.
13. Prepare a work sheet, adjusting and closing entries, and financial statements for a corporation or a single proprietorship.
14. Journalize and post transactions in special journals.
15. Explain how a controlling account and its subsidiary ledger are related for accounts payable and accounts receivable.
16. Explain how GST are recorded in special journals, how sales invoices serve as Sales Journal and how sales returns and allowances are recorded.
17. Explain liquidity, and describe the internal control procedures used to protect cash.
18. Explain the operation of the petty cash fund and prepare journal entries to record.
19. Prepare bank reconciliations.
20. Make calculations necessary to prepare a Payroll Register, and prepare the entry to record payroll liabilities.
21. Prepare journal entries to record the payments to employees.
22. Calculate employer payroll costs and prepare entries to record the accrual and payment.
23. Calculate and record employee fringe benefit costs.

BUSI 114

Business Environment and Microeconomics

1. Define the nature of Canadian business
2. Differentiate between types of economic systems
3. Describe supply and demand in markets
4. Identify the major forms of business ownership - sole proprietorship, partnership, corporation
5. Describe major trends in business environment
6. Explain the role of government in business in Canada

Social Responsibility, Ethics and Law

7. Explain why ethics are important in business
8. Describe how the concept of social responsibility applies to business' relationship with its environment
9. Describe the sources of law
10. Explain the legal requirements of contract
11. Describe agency-principal and bailee-bailor relationships
12. Outline the main points of law of property

Management

13. Explain the four functions of management - planning, organizing, directing, and controlling
14. Discuss the three basic managerial skills - technical, human, conceptual
15. Describe the planning process
16. Discuss the strategic planning process

Small Businesses

17. Identify the role of small business in the Canadian economy
18. Describe entrepreneurship and challenges facing small business owners

Production

19. Describe production and production planning and control processes
20. Describe the activities of materials management and inventory management
21. Identify the characteristics of production of services and operations planning and scheduling in services
22. Describe the importance of productivity and quality
23. Explain how companies can compete by improving productivity and quality

Marketing

24. Define marketing and explain its function in business
25. Discuss the marketing concept and define target marketing and market segmentation
26. Describe the nature of products, the new product development process and the stages of the product life cycle
27. Identify the objectives of promotion and explaining how businesses use promotion
28. Describe advertising strategies and advertising media
29. Discuss pricing strategies and tactics for products
30. Outline the channels of distribution and the use of distribution strategies
31. Identify the different types of wholesalers
32. Identify the different types of retailers

Macroeconomics

33. Identify the characteristics of money and the different forms of money
34. Discuss the different kinds of financial institutions in Canada
35. Explain how banks create money
36. Describe the role of the Bank of Canada

Business Financing

37. Describe the ways in which financial managers meet businesses' needs for funds
38. Identify sources of short-term and long-term financing
39. Describe risk and the effect of risk on financing and other business decisions
40. Explain the insurance mechanism and how it works
41. Explain what is meant by security markets and who buys securities
42. Describe the various types of bonds and the stock structure of businesses
43. Explain why securities markets are regulated

Government and Business

44. Explain how governments influence business decision making
45. Describe the various roles government plays in Canada's economic system
46. Describe the ways businesses can get involved in changing government policy

International Business

47. Understand the importance to Canadian managers of thinking internationally
48. Define trade and describe its importance in the Canadian economy
49. Describe the main forms of organization used by corporations operating internationally

BUSI 131

1. Know the three stages of the business office and how to work in any one of the them.
2. Know how the information processing cycle is being changed by today's technology.
3. Know about the kinds of equipment available for processing information and such procedures as electronic mail, electronic records management, and teleconferencing.
4. Demonstrate decision-making skills.
5. Know the communication process and the skills needed for effective oral and written communications in different types of business situations.
6. Understand the role of the office worker in organizing and processing data.
7. Understand how to evaluate and select software.
8. Know the main types of information processing equipment and the procedures used in information processing.
9. Know manual and electronic filing systems and procedures, types of microforms and the need for records retention.
10. Know how offices make use of centralized and decentralized reprographic systems.
11. Know the types of photocopiers and their features.
12. Know how desk-top publishing is used and how typesetting is used.
13. Know traditional and electronic distribution/communication systems; their advantages and disadvantages.
14. Know the traditional and electronic services available from Canada Post.
15. Demonstrate and understanding of traditional procedures for handling incoming and outgoing mail.
16. Know the procedures for sending and receiving electronic information.

17. Know the types of telephone equipment available for today's office.
18. Be able to handle incoming and outgoing call.
19. Develop a pleasing telephone personality.
20. Understand the advantages of voice messaging, teleconferencing, and other forms of electronic communication.
21. Know how to organize your work station.
22. Use electronic equipment to plan time, including the use of tickler files.
23. Understand the differences between informal and formal meetings.
24. Plan and schedule meetings
25. Prepare meeting notices, agendas and minutes.
26. Plan a conference/convention including selecting the site, speakers, registration process, meeting space and post-meeting follow up.
27. Plan and prepare for a business trip.
28. Recognize the most efficient type of travel service.
29. Record travel expenses.

BUSI 133

1. Learn to operate the transcribing machine.
2. Produce mailable copy utilizing machine transcription at **one half your typing speed**.
3. Reinforce essential language skills such as spelling, word division, capitalization, punctuation, proper use of rules concerning numbers, abbreviations, vocabulary, etc.
4. Learn proofreading skills and proper formatting of business correspondence.
5. Learn various applications software to complete projects suitable for the electronic office, Including: Database Simulation using Lotus, forms design using ProDesign, and Lotus/WYSIWYG, disk management using PC Tools.
6. Learn advanced word processing procedures, including:
 - styles for routine formatting tasks
 - macros for automating word processing tasks
 - merging for lists, keyboard entry and automated document preparation
 - tables and columns for tabular information
 - incorporate graphics into forms and documents

develop tables of contents, indexes, document summaries
learn the publishing process
design and create various desktop documents
use proper document characteristics in designing documents
use appropriate desktop publishing terminology

BUSI 151

1. Acquaint students with the theory and principles of effective business writing.
2. Apply these principles in a wide variety of business situations.
3. Upgrade students' current writing skills.
4. Familiarize students with letter and memo formats currently used in business.
5. to encourage students to use current technology, such as word processing, to facilitate the writing process.

BUSI 250

1. Develop confidence and competence in different oral speaking situations.
2. Improve their listening skills.
3. Enhance understanding of how to construct individual and group presentations.
4. Familiarize with the role of visual aids in oral presentations.

BUSI 267

1. Identify the objective of administrative office management
2. Define and identify the advantage of a management information system

Management and Organizing

3. Describe the five functions of management - planning, organizing, staffing, directing and controlling
4. Explain the major movements in the development of management theory
5. Define the organizing principles of span of control, unity of command, and chain of command
6. Explain why authority and responsibility must be commensurate
7. Describe line and line-staff organization structures
8. Explain centralization and decentralization of decision making
9. Explain the advantages of employee participation
10. Describe the components of the communication model
11. Discuss the upward and downward flows of communication in an organization
12. Identify the barriers to effective communication
13. Explore communication in groups
14. Develop effective listening skills

Office Site, Layout and Furniture

15. Discuss the important factors involved in selecting a building site
16. Identify the procedures involved in preparing to move offices
17. Identify the various factors involved in the preliminary planning stage for preparing an office layout
18. Describe how to analyze the office work flow
19. Differentiate between open plan offices and other layout alternatives
20. List the principles of effective office layout
21. Discuss the impact of the office environment on the employee
22. Explain the impact of lighting, colour, noise, air and energy usage on the office
23. Explain the need for office security
24. Identify the factors to be considered when selecting office equipment
25. Name the factors to be considered when exploring the lease versus purchase decision
26. Explain break-even analysis and payback analysis in purchasing
27. Identify methods for inventory control of equipment
28. Discuss the factors to consider in selecting office furniture

Human Relations

29. Identify the sources for recruiting office employees
30. Identify the steps involved in selecting office employees
31. Discuss the different types of employment tests
32. List the characteristics of different types of employment interviews
33. Identify Human Rights Legislation and its impact on employment
34. Identify the steps involved in developing a training program
35. Identify the principles of learning
36. Discuss alternative training methods
37. Describe the important theories of leadership
38. Identify the typical functions of supervisors
39. List the characteristics of good supervision
40. Discuss the common employees problems that supervisors must deal with tardiness, alcoholism, etc.
41. Explain the motivation process and the factors that affect an individual's motivation
42. Discuss the important theories of motivation
43. Discuss the various uses and objectives of performance appraisals
44. Describe alternative rating scales used for performance appraisal
45. Identify common rating errors in performance appraisal
46. Identify factors considered in promoting employees
47. Discuss the uses of job analysis
48. Identify alternative methods of job analysis
49. Identify the content of a job description and a job specification
50. Identify the methods of job evaluation
51. Discuss the goals of a salary administration program
52. Identify fringe benefits that are provided for employees
53. Discuss the various types of incentive pay systems
54. Discuss the objectives of work measurement
55. Explain some of the work measurement techniques
56. Outline the difference between quantity, quality and descriptive standards
57. Discuss the characteristics of effective productivity improvement programs
58. Describe the process of measuring productivity

59. Identify why employees join unions
60. Discuss the structure of unions, the collective bargaining process, and contract administration
61. Describe grievance procedures

Systems

62. Identify the components of an office system
63. Explain the characteristics of a well-designed system
64. Identify the steps involved in designing or modifying a system

Records Management

65. Identify the steps in the record cycle
66. Describe how a record retention schedule is developed
67. Explain meaning of centralized and decentralized records control
68. Discuss the various methods of disposal of records
69. Identify the content of a records management manual
70. Explain the steps in designing a forms control program
71. Identify characteristics of different types of forms
72. List the factors to consider in designing a form

Quality and Quality Control

73. Identify the steps involved in quantity or quality control
74. Discuss objectives of control
75. identify quality control techniques

Budgetary and Cost Control

76. Discuss the purposes of budgeting
77. Explain the budget preparation process
78. Identify the principles of budget preparation
79. Describe ways to control various costs

MICO 191

1. Understand the hardware and software components of computer systems used in business.
2. Know the terminology associated with computers in business.
3. Able to use DOS to perform file management and disk management routines, including:
 - system hardware components
 - booting
 - files, filenames, extensions
 - prompts and default drives
 - basic DOS commands--dir, format, erase, rename, copy, diskcopy
 - hard disk commands--cd, md, rd, tree
 - config.sys and autoexec.bat files

4. Able to use WordPerfect to create, edit, format, save, retrieve, and print files, including:
 - Editing functions--delete, copy, move, search, replace
 - Formatting functions--line, paragraph, page layout, columns, tables, footnote, endnotes, justification, margins, fonts
 - Special functions--spelling, thesaurus, merge, outline

5. Able to use Lotus to create, edit, format, save, retrieve and print files, including:
 - label, value, formula entries
 - column width
 - cell and range addresses
 - range and global formatting
 - text justification and formatting
 - printing
 - built-in functions--@SUM, @AVG, @MIN, @MAX, @VLOOKUP
 - absolute and relative cell references
 - copying
 - graphs

6. Able to use dBase to create, edit, format, save, retrieve and print files, including:
 - control centre and dot prompt
 - fields--name, type, length
 - database structure
 - adding, editing, deleting records
 - quick reports
 - listing to printer
 - locating by search and scope conditions
 - sorting and indexing

MICO 193

1. Able to use DOS and WINDOWS file management commands -and disk management commands.

2. Create and use batch files.

3. Able to use WordPerfect functions to
 - create newspaper columns
 - create parallel columns
 - edit text columns as newspaper or parallel
 - create footnote/endnotes
 - mark, define and generate table of contents, indexes, lists
 - create primary document, secondary document
 - merge from keyboard
 - insert messages
 - create single and double lines
 - draw horizontal and vertical lines
 - type in boxes created with line draw
 - incorporate graphics into a document
 - set figure and text box options
 - create figure and text box

4. Able to use Lotus:
 - use global settings
 - use range settings
 - correct circular references
 - globally protect a work sheet
 - range protect/work sheet a work sheet
 - assign and remove password protection
 - f5 goto key
 - set and clear windows
 - synchronize and unsynchronize windows
 - set and clear titles
 - fill a range with numbers using data fill
 - sort data in a data base
 - define data range
 - define primary and secondary keys
 - use date, time functions
 - use datevalue, timevalue functions
 - use date arithmetic
 - format dates, times
 - use if function
 - define operand - conditions, results
 - use operators
 - use and, or, not

5. Able to use dBase to:
 - create, modify and remove records
 - manipulate files
 - organize records
 - locate records
 - design an input form
 - design and use reports
 - create labels
 - use multiple files

***BUSINESS TECHNOLOGY ASSOCIATION
CONSTITUTION AND BYLAWS
UPDATED SEPTEMBER, 1993***

CONSTITUTION

ARTICLE I NAME

This organization shall from this date forth be called the Business Technology Association.

ARTICLE II PURPOSE

To provide members with practical experience in working with others as part of a team.

To develop attitudes and values appropriate for business.

To provide practical opportunities to apply leadership, public speaking and problem-solving skills.

This will be accomplished through projects as determined by the club. Examples: mini conference, scholarship fund, publishing a graduate prospectus, guest speakers from business community, etc.

ARTICLE III MEMBERSHIP

Any full-time student (3 or more courses) enrolled in Business Administration and/or Office Technology programs shall be a member.

ARTICLE IV OFFICERS

The officers of the Business Technology Association are: president, vice president, secretary, and treasurer.

ARTICLE V ADVISORS

Business Administration and Office Technology instructors shall serve as advisors to the Association.

ARTICLE VI SCHOLARSHIP

The members of the Association shall, by secret ballot, select an Office Technology Student and a Business Administration student to receive a Business Administration and Office Technology Scholarship each at the Winter Scholarship Reception.

ARTICLE VII FINANCIAL MANAGEMENT

The Association shall have its books audited twice a year, at the end of the fall and winter semesters.

Signing authority shall be held by the president and the treasurer of the Association.

Receipts shall be issued by the treasurer for all monies received. Expenses shall be reimbursed on presentation of receipts for said expenses. Expenditures exceeding TWENTY-FIVE DOLLARS (\$25) must be approved by the membership at a regular club meeting.

ARTICLE VIII STUDENT ASSOCIATION AFFILIATION

The Association shall apply annually for affiliation with Medicine Hat College Student's Association.

BYLAWS

ARTICLE I DUTIES OF OFFICERS

Section 1

The president of the Association shall perform duties common to such office; prepare an agenda, act as chairperson of the Association and member ex officio of all standing committees, preside at all meetings of the Association, submit an oral and formal written report at the last Association meeting each semester.

Section 2

The vice president of the Association shall perform duties common to such office; assume the duties of the president when the president is absent, shall call and chair monthly meetings of the chairpersons of standing committee, submit a written report to the secretary at each regularly scheduled club meeting, submit an oral and formal written report at the last Association meeting each semester.

Section 3

The secretary of the Association shall perform duties common to such office; keep the minutes of the meetings of the Association, maintain a complete record of all matters pertaining to the Association, submit an oral and formal written report at the last Association meeting each semester.

Section 4

The Treasurer of the Association shall perform duties common to such office; receive and act as Custodian of all funds of the Association, issue receipts for all monies received, disburse funds as required, submit a written report of these at the monthly meeting, submit a copy of the reconciled bank statement to the secretary at the monthly meeting, submit an oral and formal audited report at the last Association meeting each semester.

ARTICLE II STANDING COMMITTEES

The Association shall form the following standing committees at the beginning of each year: community relations, social activities, fund-raising, club history and newsletter.

Section 1

The community relations committee shall plan and organize major projects and events for the Association and submit a tentative plan for the semester at the second regular meeting. Ad hoc committees shall be established from the membership at the recommendation of this committee. This committee shall appoint a sub-committee to handle promotion.

The chairperson shall call regular meetings of the committee as required, attend a monthly meeting of committee chairs, submit an oral and written report at the Association's monthly meeting.

Section 2

The activities committee shall plan monthly social events for the Association and submit a tentative plan for the semester at the second regular meeting. Ad hoc committees shall be established from the membership at the recommendation of this committee.

The chairperson shall call regular meetings of the committee as required, attend a monthly meeting of committee chairs, submit an oral and written report at the Association's monthly meeting.

Section 3

The fund-raising committee shall plan and organize regular fund-raising activities for Association projects, events and activities, and submit a tentative plan for the semester at the second regular meeting. Ad hoc committees shall be established from the membership at the recommendation of this committee. This committee shall appoint a sub-committee to handle promotion.

The chairperson shall call regular meetings of the committee as required, attend a monthly meeting of committee chairs, submit an oral and written report at the Association's monthly meeting.

Section 4

The newsletter committee shall compile publish and distribute a bi-monthly newsletter for the Brooks Campus and submit a tentative schedule of publication dates for the semester at the second regular meeting. Committee members shall serve as reporters and co-operatively plan and organize the newsletter.

The chairperson shall call regular meetings of the committee as required, attend a monthly meeting of committee chairs, submit an oral and written report at the Association's monthly meeting.

Section 5

The club history committee of the Association shall perform duties common to such office; gather pictures of all events of the Association, compile a scrapbook of these events, take slides of events of the Association and prepare a slide presentation of the year's events for the year-end party of the Association, submit an up-to-date scrapbook at the last Association meeting of each semester.

The chairperson shall call regular meetings of the committee as required, attend a monthly meeting of committee chairs, submit an oral and written report at the Association's monthly meeting.

ARTICLE III SCHOLARSHIP

The Business Administration and Office Technology Scholarships shall be awarded to a Business Administration and an Office Technology student who have been accepted into the program in the fall semester (this would exclude those students who are enroled as modified Business Administration students), have a GPA of 3.0 or higher and who have demonstrated outstanding qualities as a group member through their participation in the Business Technology Association. Business Administration or Office Technology students who are attending the fall semester but not enroled in the winter semester will qualify for the scholarships.

ARTICLE VI DUTIES OF ASSOCIATION MEMBERS

Section 1

Members other than officers or chairpersons shall sit as a member and active participant of one of the standing committees and/or any ad hoc committees which may be struck.

ARTICLE V RULES OF ORDER

Robert's Rules of Order shall be the authority on all questions of procedure not specifically stated in the Constitution and Bylaws.

ARTICLE VI MEETINGS

Organizational meetings shall be held September 15 and September 29. Regular meetings shall be held every third Wednesday for the remainder of the fall semester.

ARTICLE VII AUDIT

An internal audit of the Association's financial records shall take place at the end of the fall and winter semesters. An external audit shall also take place at this time.

ARTICLE IX FISCAL MEMBERSHIP YEAR

The fiscal year of the Association shall be September 1, 1993 to April 30, 1994, and the membership year shall coincide with the fiscal year.

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



June 4, 1994

1~
2~
3~
4~
6~

STUDENT-MENTOR PROGRAM, BROOKS CAMPUS

Medicine Hat College Business Department, Brooks Campus, in conjunction with the Business and Office Technology Advisory Committee are implementing a mentor program for business administration and office technology students in the 1992-1993 school year. It is our desire to develop linkages with our local business community which will allow us to tailor our programs to your needs and, at the same time, provide students with a hands-on experience of the real world of work.

We are looking for volunteers in both the business administration and office technology areas, and anticipate companies may be able to provide one or more mentors in each area. I have enclosed a registration form and informational materials for you to copy and pass on to interested employees. If you have any questions, I can be reached at the college (362-7373) or at home (362-6875).

Students will be assigned to a mentor who will be their contact in the business community. The mentor and student will arrange for one day in the fall and one day in the winter when the student will job shadow the mentor. In addition, it is hoped that the mentor will be available to the student for advice and information about the career and the industry they are involved in.

You can help us in this endeavour by encouraging your employees to share their job knowledge with a student. We are planning an information evening on November 26, 1992 for those interested in participating. Please circulate the enclosed material to any of your employees whom you feel may be suited and are interested in the program.

Thank you for your support and co-operation in making the *ADOPT-A-STUDENT* program a success.

Pat Humphreys, Instructor
Office Technology

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



GOALS

- to provide businesses and their employees an opportunity to act as role models to prospective employees
- to provide students with a linkage which will provide an exposure to the real world
- to provide students with a contact in their field of study
- to foster an increased awareness of business programs in local businesses and industries
- to ground business classes and students in actual experiences
- to provide employers with an opportunity to advise and inform interested students about their jobs
- to develop stronger ties between local business/industry and the college
- to keep the college in touch with the needs of the business community
- to enable the college to tap into local expertise
- to examine the business program with feedback from the project
- to profile local businesses and volunteers who support business programs



MENTOR RESPONSIBILITY

- encourage and support student informational requirements
- arrange for student to spend one day each semester observing the mentor during a typical day at work
- attend an orientation evening to meet with instructor and other mentors
- attend a wind-up luncheon with students and mentors involved in the program

STUDENT RESPONSIBILITY

- contact mentor to set up an initial meeting
- meet with mentor to drop off resume and fact sheet
- spend one day each semester observing the mentor at work
- prepare a four-page report describing the experience
- organize and attend a wind-up luncheon with students and mentors

BROOKS CAMPUS RESPONSIBILITY

- generate a list of mentors
- match students with appropriate mentors
- maintain contact with mentors and students to monitor progress
- organize mentor orientation evening
- oversee wind-up luncheon
- gather feedback from students and mentors to monitor program

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

BROOKS
CAMPUS



VOLUNTEER/GUEST SPEAKER REGISTRATION

Thank you for volunteering to participate in our student-mentor project. Please fill out the form completely and return it to me as soon as possible. We will assign a student to you based on the information provided on this form.

Full Name: _____

Home Address: _____

City: _____

Postal Code: _____

Home Phone: _____

Company Name: _____

Work Phone/Extension: _____

Check the box or boxes which apply to you. My expertise is in the following fields:

Marketing	<input type="checkbox"/>	Accounting	<input type="checkbox"/>
Management	<input type="checkbox"/>	Microcomputers	<input type="checkbox"/>
Office Administration	<input type="checkbox"/>	Clerical/Secretarial	<input type="checkbox"/>

Check one or both of the following boxes:

I would like to be a mentor:	<input type="checkbox"/>
I would like to be a guest speaker:	<input type="checkbox"/>

If you checked guest speaker, please indicate the topics you be interested in presenting to the business administration and/or office technology students:

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



1~
2~
3~
4~

Attention: 6~

Dear 7~

ADOPT-A-STUDENT, STUDENT MENTOR PROJECT

Thank you for agreeing to act as a mentor in the ADOPT-A-STUDENT project. I have matched you with 8~, a student in the 9~ program.

Your student will be contacting you during the week of March 15 to March 19 to arrange for a date for the observation visit. Participating students will keep a log of their experience for preparing a report. Please fill out the enclosed questionnaire and return it to me. I am interested in knowing your impressions of the ADOPT-A-STUDENT project.

Again, thank you for taking the time to participate in this project. With the assistance of individuals like yourself, we are endeavouring to keep the business programs at the college relevant, both to students and to the business community.

Sincerely

Pat Humphreys, Instructor
Brooks Campus Business Department

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



QUESTIONNAIRE

Please take a few moments to answer the following questions. Return the form to Brooks Campus, 200 Horticultural Road East, Brooks, Alberta, T1R 1E5, Attention: Pat Humphreys.

1. What was your opinion of the student assigned to you with respect to suitability to your job position?
2. In your opinion, does this program provide the student with a valuable learning experience?
3. What, if any, suggestions do you have that would improve the ADOPT-A-STUDENT project?
4. We anticipate running the project in the Fall and Winter semesters, next year. Do you think this is appropriate? Why or why not?
5. Are you willing to act as a mentor again?

ADOPT-A-STUDENT
STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



10 May 1993

1~

2~

3~

4~

5~

Dear 6~

On behalf of Medicine Hat College, Brooks Campus, Business Department, thank you for participating in the "Adopt-A-Student" program during the Winter semester.

Without exception, students felt this was a valuable learning experience. Your willingness to spend time with these students allowed them a glimpse into the work place and a chance to see the reality of a day at work.

I know I speak for the students and faculty in the business program here at the college, when I say that your contribution has enriched us. I am pleased to send you the enclosed certificate recognizing your contribution.

Sincerely

Pat Humphreys, Instructor

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**



M E M O R A N D U M

TO: 8~
FROM: Pat Humphreys
DATE: 7 March 1993
SUBJECT: ADOPT-A-STUDENT PROJECT

I have assigned you to 6~, 1~, who has agreed to act as your mentor for the current semester.

You are to contact your mentor, by telephone (5~), to arrange for an observation day of work. Your mentor will pick a day that is suitable. Once you have the date finalized, advise your instructors.

Your assignment for the day is to keep a log of what you observe and prepare a report of your experience.

ADOPT-A-STUDENT

STUDENT-MENTOR PROGRAM

**BROOKS
CAMPUS**

STUDENT OBSERVATION/QUESTIONS FORM



	Who coordinates and delegates the work?
	What position does your mentor's supervisor hold?
	Where does the work come from?
	How many people are served by this organization? Who primarily?
	What are the job classifications of personnel in the office? What qualifications must they have? What are the duties?
	How is mail distributed? Time-in/time-out deadlines?
	What types of machines are used in this office?
	Are dictaphones used? How often?
	How are desk and drawers organized for efficiency?
	What types of filing systems are set up? What is the reason for the type of filing system? Any tickler files?
	What type of switchboard does the office have? Who answers the telephone? How are long distance calls handled?
	Who checks correspondence for accuracy? What are their standards of accuracy?
	How are supplies replenished? Who is responsible for ordering?
	How is the Petty Cash fund handled?
	Is there any bookkeeping or record keeping required?
	What kinds of telecommunication technology is used? Telegraphs, telex, facsimile, electronic mail, teleconference?
	What type of office layout is used?
	What types of pressures are associated with this job?
	What experience is required for this job? What about supervisory positions?
	What qualities and characteristics does a person in this job have to possess?
	Is this the job for you? Why or why not?
	Are there any special or unique requirements for this job?
	How extensively are microcomputers used in this office?

TABLE 1

VOCATIONAL AND ACADEMIC GOALS¹

GOALS FOR TRAINING	GOALS FOR EDUCATION
learn how to select an occupation that will be personally satisfying and suitable to one's skills and interests	the ability to think rationally, including problem-solving skills, application of principles of logic, and skill in using different modes of inquiry
learn to make decisions based on an awareness and knowledge of career options	the ability to use and evaluate knowledge, i.e., critical and independent thinking that enables one to make judgements and decisions in a wide variety of life roles--citizens, consumer, worker, etc.--as well as in intellectual activities
develop saleable skills and specialized knowledge that will prepare one to become economically independent	an understanding of change in society
develop habits and attitudes, such as pride in good workmanship, that will make one a productive participant in economic life	
develop positive attitudes toward work, including acceptance of the necessity of making a living and an appreciation of the social value and dignity of work	

TABLE 2

BILL OF RIGHTS FOR WOMEN OFFICE WORKERS²
 distributed by the National Association of Working Women

respect as women and as office workers
comprehensive, written job descriptions
compensations for overtime work and for work not included in the job description
choose whether to do the personal work of employers
defined and regular salary reviews and cost-of-living increases
maternity benefits and having pregnancy and other gynaecological conditions treated as temporary medical disabilities
benefits equal to those of men in similar job categories
equal access to promotion opportunities and on-the-job training programs
choose one's lifestyle and participate in on-the-job organizing or outside activities which do not detract from the execution of assigned tasks

TABLE 3

WORK ISSUES³

why unionized clericals earn more than non-unionized clericals
why union workers have found "equal pay for work of equal value" to be a more adequate argument for increasing the pay of clerical workers than 'equal pay for equal work'
why occupational segregation and wage disparity have increased since the passage of sex discrimination laws and regulations
why a full-time woman worker averages 59c to every dollar a man earns
why female clerics are paid only 63% of male pay even within the clerical category
why factory workers earn more than office workers when, at the turn of the century, clericals earned twice the wages of production workers
why VDT operators earn more than typists in some cities and less in others (even though their rate of production is higher) p208

TABLE 4

MODEL FOR PEDAGOGICAL REASONING AND ACTION⁴

<p>COMPREHENSION</p>	<p>of purposes, subject matter, ideas within and outside the discipline</p> <p>Representation: use of a representational repertoire which includes analogies, metaphors, examples, demonstrations, explanations, and so forth</p> <p>Selection: choice form among an instructional repertoire which includes modes of teaching, organizing, managing and arranging</p> <p>Adaptation and Tailoring to Student Characteristics: consideration of conceptions, preconceptions, misconceptions, and difficulties, language, culture, and motivations, social class, gender, age, ability, aptitude, interests, self concepts, and attention</p>
<p>TRANSFORMATION</p>	<p>Preparation: critical interpretation and analysis of texts, structuring and segmenting, development of a curricular repertoire, and clarification of purposes</p> <p>Representation: use of a representational repertoire which includes analogies, metaphors, examples, demonstrations, explanations, and so forth</p> <p>Selection: choice form among an instructional repertoire which includes modes of teaching, organizing, managing and arranging</p> <p>Adaptation and Tailoring to Student Characteristics: consideration of conceptions, preconceptions, misconceptions, and difficulties, language, culture, and motivations, social class, gender, age, ability, aptitude, interests, self concepts, and attention</p>
<p>INSTRUCTION</p>	<p>Management, presentations, interactions, group work, discipline, humour, questioning, and other aspects of active teaching, discovery or inquiry instruction, and the observable forms of classroom teaching</p>
<p>EVALUATION</p>	<p>Checking for student understanding during interactive teaching</p> <p>Testing student understanding at the end of lessons or units</p> <p>Evaluating one's own performance, and adjusting for experiences</p>
<p>REFLECTION</p>	<p>Reviewing, reconstructing, reenacting and critically analyzing one's own and the class's performance, and grounding explanations in evidence</p> <p>New Comprehension Of purposes, subject matter, students, teaching and self</p> <p>Consolidation of new understandings, and learning from experience</p>

TABLE 5

SENIOR EXECUTIVE VIEWS ON EDUCATION IN ALBERTA⁵

Links	Activities
Business and Education Cooperation	business more pro-active private industry, families and religious organizations niche cooperative programs schools should involve business business inform educators
Business to Students	career days describe expectations school visits industry associations retired people advisement and counselling short seminars on business concepts like accounting, insurance and banking
Students to Business	work experience job shadowing summer employment simple tours employer testing
Business Liaison and Advice	advisory boards advisory councils include business reviews of programs for relevance education council--executives generic basis about business

TABLE 6

MAJOR DESIGN ISSUES FOR COOPERATIVE-LEARNING
SOFTWARE DESIGN AND IMPLEMENTATION⁶

<p>Individual Accountability</p>	<p>assign rewards based on the performance of all group members</p> <p>resist excessive use of extrinsic rewards</p> <p>for larger groups, embed supplementary quizzed to be mastered individually by each group member. Require all group members to master lesson content</p>
<p>Positive Interdependence</p>	<p>assign only two or three students to a group to minimize damaging social effects</p> <p>maintain high individual accountability when groups contain more than three students</p>
<p>Promotive Interaction</p>	<p>employ heterogeneous grouping to maximize the social benefits of cooperative learning</p> <p>avoid homogeneous ability grouping</p> <p>use feedback to attribute success to effort and to explain that failure is part of the learning process</p>
<p>Collaborative Skills</p>	<p>train students to interact effectively before beginning cooperative learning</p> <p>include both task-independent and task-specific skills in cooperative- learning training</p> <p>embed prompts to remind students to interact or instructional scripts to manipulate interaction</p>
<p>Group Processing</p>	<p>routinely engage students in group processing following cooperative-learning exercise</p> <p>persevere with seemingly unproductive groups</p>

TABLE 7
TEAMWORK SKILLS QUESTIONNAIRE⁷

	NEVER	SELDOM	FREQUENTLY	ALWAYS
1. I offer facts, give my opinions and ideas, provide suggestion and relevant information to help the group discussion.				
2. I express my willingness to cooperate with other group members and my expectations so that they will also be cooperative.				
3. I am open and candid in my dealings with the entire group.				
4. I give support to group members who are on the spot and struggling to express themselves intellectually and emotionally.				
5. I keep my thoughts, ideas, feelings, and reactions to myself during group discussions.				
6. I evaluate the contributions of other group members in terms of whether their contributions are useful to me and whether other group members are right or wrong.				
7. I take risks in expressing new ideas and my current feelings during a group discussion.				
8. I communicate to other group members that I am aware of , and appreciate, their abilities, talents, capabilities, skills, and resources.				
9. I offer help and assistance to anyone in the group in order to bring up the performance of everyone.				
10. I accept and support the openness of other group members, supporting them for taking risks and encouraging individuality in group members.				
11. I share any materials, books, sources of information, or other resources I have with other group members in order to promote the success of all members and the group as a whole.				
12. I often paraphrase or summarize what other members have said before I respond or comment.				
13. I level with other group members.				

14. I warmly encourage all members to participate, giving them recognition for their contributions, demonstrating acceptance of and openness to their ideas, and generally being friendly and responsive to them.

--	--	--	--

TABLE 7

To score this questionnaire count "Never" as 1, "Seldom" as 2, "Frequently" as 3, and "Always" as 4. Reverse the scoring on questions 5 and 6. Score of 21 or over trusting or trustworthy. Add the scores in the following way:

Openness and Sharing	Acceptance and Support
1.	2.
3.	4.
5.	6.
7.	8.
9.	10.
11.	12.
13.	14.
Total	Total

TABLE 8

LEARNING TO LEARN THEORIES AND TECHNIQUES
SOURCE: ADAPTED FROM BROSTROM, 1979.⁸

Orientation to learning	
BEHAVIOURIST	New behaviour can be caused and shaped with well designed structures around the learner
STRUCTURALIST	The mind is like a computer; the teacher is the programmer
FUNCTIONALIST	People learn best by doing, and they will do best what they want to do. People will learn what is practical.
HUMANIST	Learning is self-directed discovery. People are natural and unfold like a flower if others do not inhibit the process.

TABLE 9

LEARNING TO LEARN THEORIES AND TECHNIQUES
SOURCE: ADAPTED FROM BROSTROM, 1979.⁹

Learning to Learn Theories and Techniques	
BEHAVIOURIST	Training designers select the desired end behaviours and proceed to engineer a reinforcement schedule that systematically encourages learners' progress toward those goals. Imaginative new machinery has made learning fun and thinking unnecessary. Learners often control the speed.
STRUCTURALIST	assumptions about learning to learn Content properly organized and fed bit-by-bit to learners will be retained in memory. Criterion tests will verify the effectiveness of teaching. The teacher "keeps people awake" while simultaneously entering data--a much-envied skill.
FUNCTIONALIST	The learner must be willing (or motivated) by the process or the product. Otherwise it is useless to try teaching. Performance "on-the-job" is the true test. Opportunity, self-direction, thinking, achieving results, and recognition are important.
HUMANIST	"Anything that can be taught to another is relatively inconsequential" (Rogers). Significant learning leads to insight and understanding of self and others. Being a better human being is considered a valid learning goal. Can be a very inefficient, time-consuming process.

TABLE 10

LEARNING TO LEARN THEORIES AND TECHNIQUES
 SOURCE: ADAPTED FROM BROSTROM, 1979.¹⁰

Teaching/training	
BEHAVIOURIST	Supportive: emphasis on controlling and predicting the learner and learning outcomes--cooperative, stimulus-response mentalities are valued. Process is product centred.
STRUCTURALIST	Directive: planning, organization, presentation, and evaluation are featured. Process is teacher centred.
FUNCTIONALIST	Assertive: a problem-focused, conditional, confrontational, climate--striving, stretching, achieving. Process is task oriented and learner centred.
HUMANIST	Reflective: authenticity, equality, and acceptance mark relationship. Process is relationship centred.

TABLE 11

LEARNING TO LEARN THEORIES AND TECHNIQUES
 SOURCE: ADAPTED FROM BROSTROM, 1979.¹¹

Strengths	
BEHAVIOURIST	"The Doctor": clear, precise, and deliberate; low risk; careful preparation; emotionally attentive; complete security for learners; a trust builder; everything "arranged"; protective; patient; in control.
STRUCTURALIST	"The Expert": Informative; thorough; certain; systematic; stimulating; good audiovisual techniques; well rehearsed; strong leader; powerful; expressive; dramatic; entertaining.
FUNCTIONALIST	"The Coach": emphasizes purpose; challenges learners; realistic; lets people perform and make mistakes; takes risks; gives feedback; builds confidence; is persuasive; gives opportunity and recognition.
HUMANIST	"The Counsellor": sensitive; empathic; open; spontaneous; creative; a "mirror"; non-evaluative; accepting; responsive to learners; facilitative; interactive; helpful.

TABLE 12

LEARNING TO LEARN THEORIES AND TECHNIQUES
 SOURCE: ADAPTED FROM BROSTROM, 1979.¹²

Limitations	
BEHAVIOURIST	"The Manipulator": fosters dependence; over-protective; controlling; manipulative; "for their own good"; sugar-coating; hypocritical agreeing; deceptive assurances; withholds data.
STRUCTURALIST	"The Elitist": preoccupied with means, image or structure rather than results; ignores affective variables; inflexible (must follow lesson plan); dichotomous (black or white) thinking; superior.
FUNCTIONALIST	"Sink or Swim": ends justify means; loses patience with slow learners; intimidating; insensitive; competitive; overly task oriented; opportunistic, return-on-investment mentality.
HUMANIST	"The Fuzzy Thinker": vague directions; abstract, esoteric, or personal content; lacks performance criteria; unconcerned with clock time; poor control of group; resists "teaching", appears unprepared.

TABLE 13

LEARNING TO LEARN THEORIES AND TECHNIQUES
 SOURCE: ADAPTED FROM BROSTROM, 1979.¹³

Key Words and processes	
BEHAVIOURIST	* stimulus-response * practice * shaping * prompting * behaviour modification * pinpointing * habit formation * reward and punishment * teaching machines * environmental design * successive approximation * sensitizing * training * extinction
STRUCTURALIST	* task analysis * lesson planning * information mapping * chaining * sequencing * memory * audiovisual media * presentation techniques * standards * association * evaluations * measuring instruments * objectives * recitation
FUNCTIONALIST	* problem solving * simulation * "hands-on" * reasoning * learner involvement * reality based consequence * achievement * failure * confidence * thinking * motivation * competence * discipline * recognitions * feedback * working
HUMANIST	* freedom * individuality * ambiguity * uncertainty * awareness * spontaneity * mutuality * equality * openness * interaction * experiential learning * congruence * authenticity * listening * cooperation * feelings

TABLE 14
PRIMARY PERCEPTUAL PREFERENCES¹⁴

Print	the preference of the reader/writer, who learns well from traditional texts and pencil-and-paper exercises
Visual	the preference of the observer, who likes to look at slides, films, videotapes, exhibits, demonstrations, photographs, charts, and graphs
Aural	the preference of the listener, who enjoys most lectures and also learns well from audiotapes and records
Interactive	the preference of talker, who learns best from discussions and question-and-answer sessions
Tactile/manipulative	the preference of the toucher/handler, who wants hands-on activities and also learns well from model building or sketching
Kinaesthetic/psychomotor	the preference of the mover, who likes role plays and physical games and activities
Olfactory	the preference of the smeller/taster, who associates learning with smells and tastes. This style is not often used in the classroom, but has much interest for industries such as candy making, wine producing, and pharmaceutical, where employees must learn the significance of subtle differences in odours, aromas tastes, or flavours.

TABLE 15
ANDRAGOGICAL STYLE OF INSTRUCTION¹⁵

set the climate; make it physically and psychologically receptive to learning.
involve learners in mutual planning, and make people feel committed to their decisions by providing them a role in making them
involve participants in diagnosing their learning needs, and use a model of competencies that reflects both individual and organizational needs that allows people to see the gap between the skills they possess and the skills they need
involve learners in formulating their learning objectives and using a learning contract
involve learners in designing learning plans, again through a learning contract
involve learners in evaluating learning

TABLE 16

ELEMENTS OF TRAINING LEARNING TO LEARN¹⁶

Essential Elements of Training in Learning to Learn	
Knowledge of Domains of Mental Activity	Bloom's taxonomy--cognitive (thinking/knowing), psychomotor (physical), affective (behavioral/attitudinal) domains. The categories form a hierarchy because the categories are viewed as increasingly more difficult to achieve.
Understanding Formal Learning Strategies	Weinstein and Mayer, (1986)--basic rehearsal strategies (lists); complex rehearsal strategies (written passages by taking notes); basic elaboration strategies (internal connections to unknowns such as foreign words); complex elaboration strategies (integrating new information to prior knowledge by paraphrasing, summarizing, creating analogies, generative note taking and question answering); basic organizational strategies (clustering items into groups that share some characteristic that can facilitate recall); complex organizational strategies (building internal connection to new material by outlining, networking); comprehension monitoring (self-questioning about nature of task, focusing attention on task, giving positive self-reinforcement, coping with errors and correction); affective and motivational (dealing with anxiety about and generating and sustaining motivation for learning through positive self-talk, rationalizing negative evaluations, turning the focus away from self-deprecating thoughts).
Awareness of Informal Learning Strategies	identify the assumptions underlying interpretations, test assumptions for validity, generate and test alternative interpretations, develop an orientation that decreases the likelihood of error (view mistakes or errors as leaning opportunities).
Knowledge of Learning Styles	Myers-Briggs Type Indicator (MBTI) uses Jung's psychological types, David Kolb's Learning Styles Inventory (LSI) based on work in experiential learning (convergers, divergers, assimilators, accomodators). A person's awareness of his/her dominant learning style, can accelerate the speed with which learning-to-learn skills are acquired. p59--At a recent international conference, fifteen learning-to-learn experts identified competencies for learning that fell into three categories: cognitive, personal and understanding, and interpersonal.

LEARNING STRATEGIES FROM A TAXONOMY OF MACHINE-LEARNING RESEARCH¹⁷

Rote learning	learning by direct memorization of facts without generalizations
Learning from instruction (advice taking; learning by being told)	the process of transforming and integrating instructions from an external source (such as a teacher) into an internally usable form
Learning by deduction	<p>Knowledge compilation - translating knowledge from a declarative form that cannot be used directly into an effective procedural form; for example, converting the advice "Don't get wet" into specific instructions that recommend how to avoid getting wet in a specific situation</p> <p>Caching - storing the answer to frequently occurring questions (problems) in order to avoid replication of past efforts</p> <p>Chunking grouping lower-level descriptions (patterns, operators, goals) into higher-level descriptions</p> <p>Creating Macro-operators (composition) - an operator composed as a sequence of more primitive operators. Appropriate macro-operators can simplify problem-solving search</p>
Learning by drill and practice	refining or tuning knowledge (or skill) by repeatedly using it in various contexts and allowing it to strengthen and become more reliable through generalization and specialization
Inductive learning	<p>Learning by drawing inductive inferences (a mode of reasoning that starts out with some assertions, e.g., specific observations, and concludes with more general and plausible assertions, i.e., hypotheses explaining the initial assertions) from facts and observations obtained from a teacher or an environment.</p> <p>Learning by analogy. Mapping information from a known object or process to less known but similar one.</p> <p>Learning from examples. Inferring a general concept description from examples and (optionally) counter examples of that concept.</p> <p>Learning from observation and discovery (learning without a teacher: unsupervised learning). Constructing descriptions, hypotheses, or theories about a given collection of facts or observations. In this form of learning there is no a priori classification of observations into sets exemplifying desired concepts.</p>

Note: All categories except "learning by deduction" from Carbonell et al. (1983); "learning by deduction" is from Machalski (1986); learning by "drill and practice" is from Kylönnen, Shute (1989) p129.

ROPES OF INSTRUCTION¹⁸

Retrieval	<p>cuing mechanism Perception facilitated by placing cues close to important text. Underlining or highlighting text. Organization enhanced by techniques that highlight the structure of information. Headings help students link important ideas by forming internal connections. Organization within (STM) facilitates retrieval by improving the scalability of cues in LTM Integration facilitated through strategies that build external connections between organized information and existing knowledge structures in LTM. Advance organizers and chapter summaries help link information within existing cognitive structures</p>
Orientation	<p>prepare learners for instruction by retrieving relevant information from LTM to be encoded with new information explicit (behavioral objectives--help to acquaint the learner with a specific task) implicit (advance organizers--help learner to build an internal framework for the learning task)</p>
Presentation	<p>vary video and non-video techniques to distribute emphasis purposefully and systematically increased mental effort required from print results in improved learning one pitfall of video and TV is that students will fail to process adequately colour Most effective when used to exaggerate differences and attract attention to key lesson features combine modes of presentation to enhance depth of processing</p>
Encoding	<p>requires new information to be organized within an existing cognitive structure prompts to facilitate comprehension monitoring learning tactics of strategies (Derry & Murphy, 1986) such as note-taking and reading techniques metacognitive behaviour may be fostered in instruction through the insertion of prompts that remind the learner to monitor comprehension and suggest learning strategies that may facilitate learning mnemonic aids when learning lists of factual information strategies to facilitate processing: wait time enhances higher cognitive thought; distributed practice and other forms of guidance reduce cognitive load...limited capacity of STM.</p>
Sequence	<p>autonomy given to the learner type of control, skip sections, terminate instruction, review instruction, receive additional information.</p>

THE ROLE OF THE TEACHER¹⁹

CONDITIONS OF LEARNING	PRINCIPLES OF TEACHING
learners feel a need to learn	<p>the teacher exposes students to new possibilities of self fulfilment</p> <p>the teacher helps students clarify aspirations for improved behaviour</p> <p>the teacher helps students diagnose the gap between aspirations and present level of performance</p> <p>the teacher helps students identify life problems experienced because of personal equipment</p>
learning environment characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and acceptance of differences	<p>the teacher provides physical conditions that are comfortable (seating, temperature, ventilation, lighting, decoration), and conducive to interaction (no person sitting behind another)</p> <p>the teacher accepts each student as a person of worth and respects feelings and ideas</p> <p>the teacher seeks to build relationships of mutual trust and helpfulness among the students by encouraging cooperative activities and refraining from inducing competitiveness and judgmentalness</p> <p>the teacher exposes feelings and contributes resources as co-learner in spirit of mutual inquiry</p>
learners perceives goals of learning experience to be their goals	the teacher involves students in a mutual process of formulating learning objectives in which the needs of the students, of the institution, of the teacher, of the subject matter, and of society are taken into account
learners accept a share of the responsibility for planning and operating a learning experience, and therefore have a feeling of commitment toward it	the teacher shares his thinking about options available in the designing of learning experiences and the selection of materials and methods and involves the students in deciding among these options jointly
learners participate actively in the learning process	the teacher helps the students to organize themselves (project groups, learning-teaching teams, independent study, etc.) to share responsibility in the process of mutual inquiry
learning process is related to and makes use of the experience of the learners	<p>the teacher helps the students exploit their own experiences as resources for learning through the use of such techniques as discussion, role playing, case method, etc.</p> <p>the teacher gears the presentation of resources to the levels of experience of students</p> <p>the teacher helps students to apply new learning to their experience, and thus to make the learning more meaningful and integrated</p>
learners have a sense of progress toward their goals	<p>the teacher involves the students in developing mutually acceptable criteria and methods for measuring progress toward the learning objective</p> <p>the teacher helps the students develop and apply procedures for self-evaluation according to these criteria</p>

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