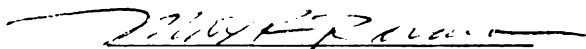This is to certify that the

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PERCEIVED EFFECTIVENESS OF BUSINESS AND INDUSTRY TRAINING PROGRAMS AND IMPLICATIONS FOR IDENTIFYING CRITICAL PERFORMANCE CRITERIA

by

John Angus Wilson

A DISSERTATION

Submitted to
Michigan State University
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ABSTRACT

PERCEIVED EFFECTIVENESS OF BUSINESS AND INDUSTRY TRAINING PROGRAMS AND IMPLICATIONS FOR IDENTIFYING CRITICAL PERFORMANCE CRITERIA

by

John Angus Wilson

Community colleges have become major suppliers of contract training to business and industry. The need for workforce training has been created by the globalization of business and the accelerating pace of technological development. Some community colleges have the faculty expertise and the laboratory facilities to position themselves to meet these training needs of industry.

This study examines the criteria used by both industry and college "stakeholders" to determine quality of industrial training programs. The two "stakeholders" from industry are the employers and the employees (trainees). The college "stakeholders" are the trainers and the college administration. **The purpose of the study is to examine the issue of quality criteria from the four stakeholder perspectives and find the levels of consensus, if any, on the criteria essential for the success of industrial training programs.**

Four industrial training programs were selected for this study. All programs were taught at a community college in Toronto, Canada. Each program was contracted by a different company. The "stakeholders" for each case were the following:

- the trainees enrolled in the program by their employers,

- the employer or person from the company responsible for contracting the training program,

- the trainer who taught the program, and

- the "account manager" at the college responsible for selling and facilitating the program.

All of the stakeholders for each training program completed a questionnaire. A different questionnaire was developed for each stakeholder group. Interviews were conducted with each of the stakeholders to probe questionnaire responses in more depth. The trainees were interviewed as a class in each case.

Major findings were 1) a need to examine in more depth the needs assessment, and 2) the need for systems to evaluate training. Needs assessments did not adequately probe for the causes of company problems. All stakeholders identified a need to improve the skills of the needs assessors and a need to improve the assessment of training impact on the company. Employers, especially, sought expertise in designing and implementing systems to evaluate training programs.

DEDICATION

This dissertation is dedicated to my Mom who taught me to dream and to my Dad who taught me to set a course and stay true to it so that those dreams could come true.

ACKNOWLEDGMENTS

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CHAPTER 1 : TRAINING FOR BUSINESS AND INDUSTRY

Training is a necessity if Canadian business and industry are to compete in an increasingly global marketplace. Large amounts of money are spent on training, yet evaluation of training remains superficial. Employers and employees are asked if they are happy with training. If detailed evaluation is conducted, it is usually a questionnaire about inputs to the training such as quality of presentation, course materials, and facilities. Rarely does such evaluation deal with the outputs of training or attempt to measure whether the training has accomplished its objectives.

PROBLEM STATEMENT

It is important to determine the criteria by which business and industry customers evaluate the contract training that they buy from community colleges so that quality training standards can be met. Drucker states that an organization must think about the criteria important to its customers. "Any institution needs to think strategically what its business is doing and what its customers pay it for. What is value for our customers?" (1980 p 61) What is of 'value' for the customers of the college business and industry contract training programs? Quality will be defined not by community colleges but by their industrial customers -- the employers and employees who come to the community colleges for training. Industry has already had to learn that lesson. "The Japanese have 40 percent of the car market in California because they build something that the car buyer wants. They understand that the customer--not design engineers or executives--defines quality" (Seymour 1992 p 13).

PURPOSE OF THE STUDY

The purpose of this study is to delineate the formal and non-formal criteria used by the "stakeholders" to judge the quality of four training programs taught by a community college in Toronto, Canada and contracted by four business and industry clients of the college.

SIGNIFICANCE OF THE STUDY

This is an exploratory study to determine the criteria used by stakeholders associated with industrial training contracts at a community college. Previous studies (Warford 1989 and Diaz 1992) have examined the criteria used to evaluate contract training programs. Those studies, however, were restricted to the criteria used by employers and college administrators. This study examines the criteria used by trainers and trainees in addition to those used by employers and administrative staff at a community college.

The "stakeholders" in this study of contract training programs are:

- the four **training managers** or representatives of the employers responsible for training in the companies purchasing the training,

- the **trainees** enrolled in the four training programs by those companies,

- the four **trainers** who presented the programs for Humber College,

- the four **account managers** or program coordinators who sold and supervised the programs for Humber College.

CONTRACT TRAINING IN COMMUNITY COLLEGES

The provision of contract training services to business and industry is one of the most rapidly growing activities of community colleges. William Connor states that, "There is little doubt now that the introduction of industrial training into the two-year college environment will represent one of the most historic events in all of higher education for the decade of the eighties" (1984 p 29). Gollattscheck, McKenny, and Mahoney conclude that "given the demographics and technology-driven changes in the workforce, there is good reason to predict that employee education and training could become the dominant force in two-year colleges" (1986 p 159). Given the potential importance of industrial training programs, it is essential that community colleges have a means of evaluating and making improvements to these programs.

Evaluation of training should effectively measure the impact of training on employees. Did the trainees learn what was taught? Were the new skills applied on the job? Ultimately, companies must be able to measure the return on money invested in a training program. If evaluation is to succeed in accomplishing this goal, there needs to be a set of criteria against which the success of the training can be measured. Such criteria can be used to measure the effectiveness of contract training programs from the point of view of the customers served. There should be consensus among the stakeholders regarding the validity of such criteria used to assess training programs. Stakeholders include those people directly connected with and affected by training programs.

If the community colleges are to be successful in the business of providing contract training services to business and industry, they must have a clear idea of the criteria used by consumers of training programs to measure their quality.

Kent describes the need of the colleges to adopt industrial standards of quality for training programs.

> To be successful, colleges need to understand who the customer is. We do not have the luxury of time, and contrary to some perceptions, we don't have a lot of money. Colleges need to learn to operate in an industrial environment, to provide quality services the customer is willing to buy (Kent 1991).

Community colleges have an opportunity to position themselves in the industrial training market. To do this, they will need to have an understanding of the criteria by which employees and employers judge the effectiveness of training.

THE NEED FOR BUSINESS AND INDUSTRY TRAINING

Economic, demographic and political forces are shaping our society and impacting higher education in general and community colleges in particular. Some are worldwide in nature, such as the globalization of business and industry and the pace of technological change. Others are more national in nature, namely, the demographic and political forces that are shaping our colleges.

The economy of the world is changing in two ways that create a need for workers to learn new skills. First, the economies of countries around the world are becoming "globalized" or linked by trade resulting in increased competition. Second, the pace of technological change is accelerating requiring workers to update skills.

The Globalization of Business and Industry

The trend towards a global economy is summarized by Employment and Immigration Canada (1989 p 2).

> The technologies of production, transportation and communications are eliminating barriers of distance or national boundaries--allowing firms to respond rapidly to market demand around the world, and deliver a product faster than ever before. What counts for Canada now are not natural

advantages but the "engineered" advantages that we can create through technology, innovation and a skilled workforce.

The trend towards globalization of business is described by the Premier's Council of the Ontario government in one of its reports.

> In recent years, we have seen a trend toward globalization of both industrial production systems as well as of marketing systems. Product differences between countries are declining rapidly and brand names have become truly international in their market appeal. At the same time, many production systems are now organized according to an international division of labour, with low-wage production residing in the less developed world and complex production anchored in high-wage countries (Premier's Council 1990 p 2).

The report continues using the production of television sets as an example of such globalization.

> Colour television represents a good example of globalization of an industry. The number of manufacturers of colour television sets has shrunk from over one hundred, twenty-five years ago to about ten, today. Models are now marketed worldwide instead of to national and regional markets. Production of TVs has been globalized as well. Components are assembled in low-wage countries in the Far East or Mexico. Picture tubes are manufactured in Japan, North America, or Europe. Cabinet building and final assembly takes place close to the final markets. Ontario used to have plants manufacturing TVs and other electronic equipment. Most of those have either closed up or been converted to final assembly facilities only (Premier's Council 1990 p 2).

The trend towards a globalized economy is creating a need for an "innovative and skilled workforce" (Employment and Immigration Canada 1989 p 2). Robert Reich states that with the globalization of the world's economy "Each nation's primary assets will be its citizens' skills and insights" (Reich 1991 p 3). In such a global economy, investment in training becomes key to maintaining prosperity.

> Investment in factors of production which are unique to the nation -- particularly in the nation's citizens and in all the transportation and communications linking them together and to the rest of the world -- are critically important to the nation's future. This is because the return on human capital is rising relative to that on financial capital, and because such public investments uniquely help the nation's citizens add value to the world's economy (Reich 1991 p 266).

High-skill, high-pay jobs will go to where the high-skill workforce is. Globalization of business is creating a need for Canada to develop a workforce as skilled as that of the countries with which it wishes to compete. This need for a skilled workforce creates an opportunity for community colleges to become more involved in industrial training.

The Accelerating Pace of Technological Change

Technological advances are changing not only the products we use but also the way we manufacture these products. For example, the cars we drive have about $2000 worth of hardware and software to control fuel mixture and ignition, and to perform diagnostic tests. Repairing cars in the 1990s requires very different skills from those required twenty years ago. The skills of twenty years ago are no longer adequate today. Cars are manufactured in highly automated plants using micro-processor or computer controlled equipment. Technological change is so rapid and so profound that it can quickly render obsolete manufacturing and repair skills that took a lifetime to acquire.

The introduction of technology does not eliminate the need for skilled labour; instead, it increases the need for new labour skills. According to Drucker, businesses are realizing that "knowledge work cannot be replaced by capital investment" (1980 p 26). Businesses cannot "trade off labor against capital". In order to improve productivity, "managers thus have to manage separately the productivity of all four key resources: capital, crucial physical resources, time, and knowledge" (1980 p 28).

In Canada, the shift from a resource-based economy to a "knowledge-based" economy is indicated by a shift in exports.

> Resources accounted for 40 percent of Canada's exports in 1963 but only 22 percent in 1987. Within that context, Canada's transition from a resource--to a knowledge-based economy--is vital to gaining a competitive

advantage linked to the flows of technology which lie behind traded goods and services (Employment and Immigration Canada 1989 p 1).

The accelerating pace of technological advancement is increasing the skill levels required by industrial employees.

Demographic Forces

Within Canada, training in the community colleges is being affected by demographic forces, such as a slowing in the growth of the labour force and an aging of the working population. Demographic trends are creating a need for workforce training This need, in turn, creates opportunities for the colleges. Political and financial limitations are resulting in funding cuts and forcing colleges to search out alternate sources of revenue.

Declining Growth of the Labour Force

According to a Canadian government report, the skill level required by new jobs is increasing.

> Of all the jobs created between 1986 and the year 2000, 64 percent will require more than 12 years of education and training; almost half of these new jobs will require more than 17 years of education and training (Employment and Immigration Canada 1989 p 9).

In Canada, new workforce skills have typically been provided by young people joining the workforce and by immigration. Today, however, lower birth rates and immigration are having an impact on the make-up of the workforce of Ontario. The labour force in Ontario is growing at a slower rate than it did in the 1970s and the 1980s .

> The labour force will grow at an average rate of only 1.2 percent over the 1990s. Only about 180,000 persons will join the labour force each year, compared to over 200,000 during the 1980s and over 300,000 during the 1970s when the "baby boomers" were entering the labour force (Employment and Immigration Canada 1989 p 13).

According to the Ontario Council of Regents report entitled <u>With the Future in Mind: An Environmental Scan</u>, the population of Ontario is projected to rise by 11.1 percent in the decade from 1991 to 2001 and by 7.9 percent from 2001 to 2011 (Ontario Council of Regents 1989 p 19). This compares with a growth of 19 percent per decade from 1922 to 1991 (Ontario Council of Regents 1989 p 19). As a result, new workforce skills will have to be provided increasingly by retraining the existing workforce. This change is having a major impact on the community colleges in Ontario. The market of the college is shifting from training young people for entry into the workforce towards retraining of adult workers.

An Aging Workforce

The slowing of population growth is resulting in an aging of the working population. The median age of the Ontario population is projected to rise from a low point of 27.2 years in 1971 to 40.2 years by the year 2011 (Ontario Council of Regents 1989 p 21). The aging of the population results in fewer young people joining the workforce which, in turn, increases the average age of Canadian workers. "In 1986, about 49 percent of the labour force was over the age of 34. By the year 2000, this figure will increase to almost 60 percent of the labour force" (Employment and Immigration Canada 1989 p 14).

However, seniority will not offer older workers as much protection as previously. Layoffs in industry are typically done on a seniority basis. With fewer young people joining the workforce, older and more senior workers will be susceptible to layoffs or forced retraining.

> In the future, with a smaller proportion of youth in the labour force, the
> effects of economic adjustments will reach older workers more quickly,
> requiring them to demonstrate greater flexibility and adaptability than has

been required of them in the past (Employment and Immigration Canada 1989 p 15).

Educators need to address the training needs of an aging workforce in a changing economy. How can community colleges become more involved in teaching new skills to older workers?

Immigration

The flow of immigrants to Canada no longer provides the new skills that it did a generation ago when many skilled Europeans came to Canada following the Second World War.

> Immigration is changing the make-up of the workforce in Ontario. The rate of net immigration to Ontario is equal to the natural increase in population. This immigration is no longer primarily from Europe. Increasingly immigration is from areas that are not as technologically advanced as Ontario, such as Asia and Africa (Ontario Council of Regents 1989 p 23). The changing patterns in terms of origins of immigrants raises the issue as to whether the training requirements of future immigrants will differ substantially from those of past immigrants. With immigrants increasingly coming from countries which are not as technologically advanced as Ontario, one is tempted to conclude that a growing proportion of immigrants will require skills training (Premier's Council of Ontario 1990 p 3).

Education levels of the immigrant population are lower than the Ontario average. "Only 35 percent of adult immigrants to Ontario have 13 or more years of education, compared to 50 percent of Ontario residents with this level of education (Premier's Council of Ontario 1990 p 10).

This is a change from a generation ago when we were able to recruit skilled labour from Western Europe. "Ontario industry can no longer rely on technically-trained immigrants from western Europe" (Council of Regents 1989 p 23). With skilled labour

in short supply, employers will have to hire from the available pool of labour or provide training to upgrade skills.

Political Forces

To date, government has been the primary source of funding of the Ontario community colleges, but the governments of Canada and Ontario are now under severe fiscal pressures. The present governments have inherited social programs often initiated by governments a generation ago, in different social, political, and economic times. Deficits are high and the accumulated debt grows, as, of course, do the carrying costs of that debt. The Ontario government is aggressively looking for ways to cut costs. Community colleges must compete for scarce dollars with such other programs as law enforcement and corrections, health care for an aging population, daycare, and welfare. The decline in traditional sources of revenue is forcing colleges to actively seek new markets and new sources of revenue by becoming suppliers of training services to business and industry.

All of the previously mentioned demographic, economic, and political forces combine to produce a skills shortage which creates an opportunity for the colleges to market training and education programs to business and industry. Employers have a need for staff training and are turning to suppliers of training, including the colleges, to meet those needs.

THE GROWING MARKET FOR BUSINESS AND INDUSTRY TRAINING

Canadian industry faces a skills shortage and must invest in training its workforce to stay competitive in an economy characterized by the globalization of business and the

acceleration of technological change. In Canada, the restructuring of the economy has been accelerated by the Canada-U.S. Free Trade Agreement. Harsh realities accompany economic restructuring. Plants closed due to international competition; people lose their jobs and find themselves without the skills required for the jobs available. Industry now demands a more highly skilled workforce. According to Andrew Sharpe, head of research at the Canadian Labour Market and Productivity Center, Canada faces a shortage of skilled workers in spite of a high unemployment rate.

> In many occupations the rapidly growing demand for skilled workers is outstripping the abilities of the education system and immigration to supply the needed number of workers. This development has led to the creation of a skills gap... Consequently, these labour shortages may be more structural than cyclical in nature and will be alleviated only by increasing the supply of skilled workers through training and possibly through immigration (Sharpe 1992 p 23-24).

How and where will workers acquire the needed skills? The community colleges are in a position to capture the skills training market, if they can meet the training needs of business and industry.

Corporate education is big business. Estimates by Lombardo (1989) and by Alter (1988) both place annual expenditures for corporate education in the United States at $210 billion US. This is an expenditure which "rivals those of all our public and private elementary, secondary, and post secondary schools combined" (Alter 1988). This is a dramatic increase from the $60 billion U.S. spent annually on industrial training in 1981 as estimated by Bloomberg (1989).

Canadian expenditures on industrial training are far lower. Betcherman (1992 p 32) makes the case that Canadian industry is under-investing in workforce training compared to other countries. "International comparisons with all their problems, support the position that Canadian industry does not invest in training as much as is the case elsewhere."

How Much is Spent on Workforce Training in Canada?

The Ontario government estimates that "U. S. industry spends more than twice as much per worker on training as Canadian firms do. West German employers spend four times as much--about 1.2 percent of GNP, versus .3 percent in Canada" (Premier's Council 1990 p 10). Other estimates by the federal government are approximately the same. One of the best sources of information on industrial training in Canada is the Human Resource Training and Development Survey conducted by Statistics Canada on behalf of Employment and Immigration Canada (Sharpe 1990 p 24).

> This survey (Statistics Canada 1989) found that in 1986-87, Canadian firms spent $1.4 billion on training, an amount equivalent to approximately 0.6 percent of payroll or 2.4 percent of GNP. On a per-employee basis this represents about $160 and is estimated to be less than half the level of training expenditure by American firms (Sharpe 1990 p 24).

The Ontario Manpower Commission estimates annual spending on formal industrial training at $1 billion (Premier's Council, 1989 p 123).

How Many Workers Get Industrial Training?

Each year, Statistics Canada publishes the <u>Adult Education and Training Survey</u> (AETS) which provides a comprehensive account of education and training activities of adult Canadians. It includes both employer and non-employer sponsored activities and makes no distinction between training and education (Kapsalis 1993 p 4).

According to the 1990 AETS, 1.3 million workers or 14 percent of the work force took part-time training (Cromptom 1992 p 30). Up to and including 1990, if a respondent was absent, information was obtained by proxy responses from other members of the household. More than half of the responses in the past were proxy responses (Kapsalis

1993 p 4). Kapsalis believes that such errors in survey methods resulted in low estimates of worker participation in training programs. The figures in the 1991 AETS are much higher, at least in part owing to a change in survey methods. Starting with the 1991 survey, all responses were obtained directly from the respondent. The 1991 AETS indicated a higher level of participation.

> ...30 percent of employees participated in employer sponsored programs and courses in 1991, excluding informal on-the-job training. In addition, 18 percent of employees participated in programs on their own with no employer support. Overall, 41 percent of employees participated in programs and courses in 1991 (Kapsalis 1993 p 4).

Kapsalis states that in order to get an accurate representation of industrial training, it is necessary to consider the relatively high expenditure on post secondary education in Canada.

> According to the OECD (Organization for Economic Co-operation and Development, Paris, France), Canada spends much more per post secondary student than the OECD average, even after adjustments are made to reflect relatively higher per capita GDP (OECD 1992). More notably, Canada has the highest post secondary enrollment rate among all OECD countries. In contrast, Germany, which is often referred to as a model for employer training, has the lowest post secondary rate among countries reviewed (Kapsalis 1993 p 4).

Sharpe cites Statistics Canada 1987 and Carnevale and Gainer 1989 as sources to compare total expenditures on training in Canada and the United States.

> Despite the higher public expenditure in Canada, (as compared with the United States) total expenditure on training, which includes both public and private sector expenditures, was still proportionately higher in the United States than in Canada (Sharpe 1990 p 25).

There is a large and growing demand for industrial training in Canada. This represents a business opportunity for the community colleges to position themselves as industrial trainers.

Training on a Corporate Level

Corporations have long seen the need for on-going employee training. For example, IBM operates an enormous education enterprise.

> IBMers around the world complete a staggering 5 million student days per year, giving each one an average of about 12 days. The yearly education budget of $900 million U.S. includes the cost of the people, equipment, and facilities needed to deliver the training but does not include the salaries of the people being trained (Galagan 1990).

IBM estimates the cost per student day at $350 using a centrally located classroom and $150, using a classroom in a plant site (Galagan 1990). IBM, according to Galagan (1990), sees a need for an increasingly skilled workforce. "We believe that if IBM is going to succeed, our people have to know more and be able to do more than the competition, and so we educate them accordingly." Training will be required both for existing employees as well as for employees hired in the future. An estimated two-thirds of the employees for the year 2000 already work for IBM (Galagan 1990). Concerns about the future availability of employees with adequate technical skills are prompting companies such as IBM to look at an increase in training of entry-level employees.

Large corporations have the resources to use their own physical training facilities and do not need the training facilities of the community colleges. The market niche for the colleges is more likely to be the small- and medium-sized corporations who either cannot afford or for whom it is not cost effective to set up and staff training facilities of their own.

RESEARCH QUESTIONS

1. What are the perceived "criteria-in-use" to judge the effectiveness of selected business and industry contract training programs by four selected stakeholder groups:

the **trainees** who attend those training programs,

the **employers** or representatives of the company responsible for purchasing contract training,

the **trainers** who serve as teachers in implementing contract training programs, and

the **account managers** at the college responsible for formulating the training contract?

1B.   What are the perceived "criteria-in-use" by the above stakeholders to judge:

the credibility of the college as a training agency,

the effectiveness of the needs assessment process,

the knowledge, skills, and attitude outcomes of training,

the application of training to the job,

the impact of the training, and

the measures needed to improve the training programs?

2.   On which of the selected criteria used to assess effectiveness are there agreement or consensus among all the stakeholder groups?

3.   Which criteria used to assess effectiveness of training programs are important to a single stakeholder group, but not to all groups?

ROLES OF THE STAKEHOLDERS IN THE TRAINING PROGRAMS

Trainees

The trainees in the first program were maintenance mechanics, electricians and instrumentation technicians. The second program was a supervisory skills program for "lead hands" and "front-line supervisors". Trainees in the third program were set-up technicians, material handlers, and machine operators from a plastic bottle manufacturer. The fourth program was for employees of an automobile bumper manufacturer and included machine operators and set-up technicians.

Employers

The employer representative in each case study was the person at the manufacturing plant who was responsible for training. This was the person charged with negotiating and overseeing the training contract with the college. The position within the four companies in this study included the following: a training manager, a human resources manager, a plant manager, and a person from the human resources department in charge of training.

Trainers

One trainer had been hired from industry to run a packaging mechanics program. He has since become a full-time trainer for the Business and Industry Services (B&IS) division at Humber College. The second trainer came to Humber from a career as an industrial engineer. At Humber, he has taught business programs and industrial training contracts. The third trainer recently came to Humber after a long career in industrial management and training. The fourth was a recent graduate of a Humber College technology program.

Account Managers

One of the account managers came to Humber from a career in construction and manufacturing. The other three were previously in clerical and support staff roles within the college.

CONTEXT OF THE STUDY

Humber College is a large suburban college in Metropolitan Toronto, Canada. It is one of the largest community colleges in Canada and the only member of the League For Innovation in the Community College. The Business and Industry Services division (B&IS) was established by Humber College to create new business opportunities and generate revenues for the college by positioning the college in the competitive training market. According to Kris Gataveckas, the Vice-President of Business Development at Humber, the B&IS is the largest training operation in any North American college.

The college was responding to a perceived need for upgrading and re-training people in the workforce. Companies want training to solve problems such as variance of the product or need for employees to have either more skills or a wider range of skills so that work can be done without hiring additional workers. The purpose of the B&IS is to provide industrial training customers of the college with a single contact point through which they can obtain access to the talent and resources of the college. "One-stop shopping" seems to be the unofficial motto of the B&IS.

According to Dr. Robert Gordon, the President of Humber, the plan was to integrate B&IS quickly with the rest of the college. Unfortunately, the recession has lowered the demand for training. During the recession of the early 1990s, many companies were struggling to stay in business let alone do training. Government funds to subsidize training have become less available. According to Dr. Gordon, both federal and provincial governments have taken training funds from the colleges and put them into private-sector--both corporate and union--training programs.

Integration of the B&IS has also been difficult because of the internal culture and structure of Humber College. The majority of college revenues come from post-secondary programs. As a result, the activities of the B&IS are seen by most faculty and

administration as a secondary and peripheral focus of the college. It appears that the union contract and the administrative systems of the college were set up to run post-secondary programs. They may not be well suited to the flexibility needed to run training programs.

ASSUMPTIONS

Common Frame of Reference

It was assumed that a common frame of reference exists for terms and concepts used in questionnaires and interviews. The researcher was present to answer any questions when trainees completed the questionnaire.

The Goal of Training Evaluation

The goal of training evaluation should be to effectively assess the return on resources invested in a training program. To accomplish this goal, there needs to be a set of criteria by which the success of the training can be assessed. The criteria should provide guidelines for:

- assessing the perceived effectiveness of contract training programs generating significant learnings for trainees,

- assessing the output as well as the input of the training, and

- determining acceptable levels of consensus among the stakeholders regarding the perceived effectiveness of the training programs .

Generation of Evaluation Criteria

If community colleges are to be successful in the business of providing training, they must have a clear idea of the criteria by which consumers of training programs assess the quality of training programs offered by those colleges. Criteria exist typically in people's minds (at least in the mind of the designer of the program) prior to the initiation of the program when the objectives are established. Criteria must meet the needs of the business purchasing the contract training program from the college. Ultimately, business must treat education as an investment, and, like any other investment, the value of education is assessed in terms of its return. Companies are searching for a return on the money that they spend on training. Criteria which will provide a means of assessing the effectiveness of a training program in meeting a companies goals and objectives should also provide a method of assessing the return on the training investment. Such "effectiveness criteria" could help community colleges to focus on establishing goals against which to measure the quality of contract training offerings. A knowledge of "effectiveness criteria" can be used for the improvement of contract training programs. When training programs are measured against such goals, it is possible to assess improvements in the quality of the programs.

This study proposes to determine the criteria by which people involved with business and industry training measure the effectiveness of such training. An understanding of "effectiveness criteria" can be of key importance in the improvement of contract training programs.

DELIMITATIONS

The study is limited to fee-for-service contract training programs that were directly paid for by an employer. In such programs, the employer contracts with the

college to supply training and, thus, has considerable control over the course content and teaching methods. This research does not examine government-sponsored programs for unemployed workers. In such programs, the government would be a powerful stakeholder. It was decided not to examine the political issues surrounding government-sponsored re-training programs.

This is **not** a longitudinal study measuring productivity changes over a long period. The researcher studied four programs which ranged in length from one to two years. All of the selected programs were at least three-quarters complete.

LIMITATIONS

The most significant limitation of this study may be the use of a small number of training programs at only one college. The Business and Industry Services division at Humber College is in an early, and probably still, developmental stage.

The questionnaires were designed primarily for use in the interviews. For this reason, the adjectives used in the questions are not standardized and defined. This might affect the questionnaire response data and, therefore, represents a limitation in this study.

This study examines the perceptions of the criteria by which effectiveness is assessed. The researcher must rely on the self-reported criteria of the participants. There is a wide spread among the education levels and language skills of the stakeholders that will be part of this study. However, that problem was dealt with by the collection of data through both questionnaires and interviews. Interviews to probe responses in more detail were conducted after participants had filled out the questionnaire.

This formative study identifies the criteria for assessment through comparative analysis of the responses of stakeholders. At best, this is an opinion study with considerable reliance on responses that may vary greatly over time as further on-the-job

experience is attained. Other researchers, in different circumstances, may find other issues for contract training programs . The limitation of case study research is that results will be generalizable to the extent that other colleges and trainers find themselves to have similar programs and stakeholders.

GLOSSARY OF TERMS

Account Manager - A Humber College staff member who sells and coordinates the delivery of contract training to business and industry customers of the college.

Application of Learnings - The transfer of knowledge, skills, and attitudes from the training to the job.

Assessment of the Impact of Training - Formal or non-formal means of judging whether training has made measurable changes to the company.

Association of Colleges of Applied Arts and Technology of Ontario (ACAATO) - An organization of the 23 Ontario colleges of applied arts and technology.

Blow-Molding - An industrial process to manufacture plastic bottles by blowing a bubble of molten plastic into a mold.

Business and Industry Services (B&IS) - A division of Humber College which sells and delivers contract training services to business and industry.

Canadian Plastics Training Centre (CPTC) - A department of the B&IS at Humber College set up to deliver training services to the plastics industry in Canada.

College of Applied Arts and Technology - An Ontario "community college" whose mandate is to perform a vocational job preparation but not a junior college transfer role.

Contract Training - A fee-for-service arrangement in which training is hired and paid directly by business or industry.

Criteria - Outcomes of training which act as standards to assess the quality of training.

Employer - The management person for the company responsible for purchasing and facilitating the contract training from the college.

Injection-Molding - An industrial process to manufacture plastic parts by forcing molten plastic into a mold.

Multi-Skilling - The teaching of a secondary trade or a sub-specialty within a trade.

Needs Assessment - A process of diagnosing company problems, determining if they can be solved by training, and designing training goals to treat those problems.

Program Coordinator - A Humber College staff member who sells and facilitates the delivery of contract training to companies in the plastics industry.

Society of Plastics Industries - An association of Canadian plastics companies.

Stakeholder - An individual or organization involved in training who stands to gain or lose based on the outcome of the training.

Trainees - The "students" of the program who are being trained on "company time" with the costs of the training being paid for by their employer.

Trainer - The "teacher" of the program employed by the college who designs and delivers the contract training.

CHAPTER 2 : RELATED TOPICS

Chapter Two contains a discussion of the following: the training agenda, the evaluation of training, studies that have established evaluation criteria of stakeholders, and the credibility of the colleges as trainers and troubleshooters.

TRAINING AGENDA

Who Should Set the Training Goals?

Purchasing training is more complex than purchasing raw materials or janitorial services. There are many "stakeholders" in the training; each has an interest in the success of the training, and each measures success of training programs differently. "Most evaluations are a waste of time unless one starts by clarifying the purposes they are intended to serve--and this usually means clarifying whose purposes are being served" (Easterby-Smith 1992 p 43).

According to Geroy and Wright (1988), involving stakeholder groups in the evaluation process increases the utilization of such research.

> There are two primary participants in evaluation research: the researcher and the stakeholder group. The Stakeholder group is included because of the belief that people who have a stake in an evaluation research outcome should be actively and meaningfully involved in shaping that research effort thus increasing the likelihood of utilization (Geroy and Wright 1988 p 17).

Who Are The Stakeholders?

The selection of stakeholder groups involved in this study was derived by the researcher from the literature on evaluation. Geroy and Wright quote a definition of a stakeholder group from Anderson and Ball (1978).

> The stakeholder group is comprised of individuals or representatives of groups who will use or be affected by information resulting from the evaluation research activity (Geroy and Wright 1988 p 23).

The stakeholders, according to Easterby-Smith (1992) are: the trainees on the course, the sponsors (or employers), the trainers employed to run the course, and the course designers. In this study, the researcher modifies the stakeholder groups identified by Easterby-Smith (1992). Stakeholder groups in this study included the trainees, employers, and trainers identified by Easterby-Smith (1992). This study differs in the selection of account managers instead of program designers. The reason for this difference is that the cases in this study had no one program designer. Many individuals and groups had input into the design of the training including: the trainer, the employer, employees, contract manager, and industry associations. The account managers chosen as stakeholders in this study are the people at Humber College who sell and facilitate the training programs.

Interests of the Stakeholder Groups

Employers want to see results (usually increased productivity and profitability) to justify the expenditures made on training. Trainees want to see that training is meeting their personal and professional goals to justify their time and effort. Trainers want to meet the needs of the employer and the trainees in a way that is educationally sound and protects the college's reputation as a deliverer of quality education programs. Account managers are focused on meeting the needs of the employer and the trainees in a manner

that will ensure repeat business for the college and generate a profit. Koehorst and Verhoeven talk about these varying and sometimes conflicting interests.

> The concern of a department or the head of a department might be to achieve a particular goal by sending one or more of its employees on a course. The employee has objectives of his own. And the trainer, too, has an idea of what he wishes to achieve with a course. If all three objectives converge, all is well. But in practice, this is not always so; inappropriate objectives may creep in, or the objectives may be quite unclear (Koehorst and Verhoeven 1986 p 21).

Each of the stakeholder groups has a "training agenda" of its own. The following section of this study discusses the interests of the previously identified stakeholder groups.

Trainees' Interests

The trainees in contract training programs are different from fee-paying students in regular college programs. Contract training programs are run at the request of the company. In many cases, management decides what is to be taught and who is to be taught. As a result, trainees may feel uninvolved and uncommitted to the training program.

The trainee should be more than just the recipient of the training. He/she can become a partner in the learning process. Evaluation of training must take into account the criteria that are used by the trainee to measure the success or failure of the training program. If trainees have not been involved in planning the program, they may be motivated solely by extrinsic motivators such as continued employment, or more positively, by promotion and increase in pay (Clarke 1984 p 20) and (Tomkins and Daly 1992 p 45). Employee benefits of training, according to Bloomberg (1989 p 93), include the intangible benefit of status as well as the tangible benefits of earnings and job security.

Pre-tests can be used to determine the skill level of trainees prior to a training program and post-tests can be used to determine if the objectives have been met or if remediation is required. Trainees may be involved in the contract training collectively, through their unions or associations, or individually. However, training can sometimes be perceived as a potential threat to unions, especially when it involves testing. The concerns of unions regarding pre-tests and remediation are summarized by Clarke.

> No training program can be a success at a unionized company without union support. Care must be taken at each step to assure the union representative that the program is a fair one and that it has been designed with input from labor and management. It is also important that any pre-tests are identifiably job-related and that remedial instruction is available for those who do not pass the first pre-test. The key to working with unions is to show them clearly the long term benefits for their employees (Clarke 1984 p 28).

Employers are concerned that skills be applicable to the job. Employees and their unions often want the training to include generic skills that are portable and of benefit to the worker in future work with either the present or another employer.

> The union is especially concerned about generic, portable skills such as verbal and written language proficiency, math skills and interpersonal skills. Also on that list are "learning skills" and a basic understanding of technology, which is necessary for coping with technological advances, new economic conditions and changing jobs (Nopper 1993 p 58).

Multi-skilling programs are sometimes perceived as a threat by unions. The teaching of new skills to employees is sometimes seen as a threat to job security.

> Conflicts sometimes arise when management uses training to promote "multi-skilling" -- teaching workers a variety skills that enable them to do several different jobs. For management, this means greater flexibility. For unions, multi-skilling can be a job-threatening technique that upsets existing job classifications (Premier's Council Report 1988 p 10).

An argument can also be made that multi-skilling can increase job security because employees who are more flexible become more valuable to their employers and are less likely to be laid off.

College credentials are important to trainees because they are portable and can be taken by the employee to a new job. Some training programs, such as the one taught by Humber College to Honeywell Canada employees, offer an opportunity to earn a Humber College diploma or certificate (Nopper 1993 p 56).

Employers' Interests

Employer interests are largely economic. Training is assumed to be beneficial to a company. Although money is spent on training, companies have conducted little evaluation to measure the outputs of training. Gutek (1988 p 109) concludes that

> Training remains a corporate exercise that is taken on faith; little or no demand has been made to evaluate it in rigorous fashion. Training is assumed to enhance the goals of the organization.

There is little accountability required for the money spent on training according to the corporate managers surveyed by Gutek (1988 p 109-110).

> Of the upper-level managers responding in this study, 91.9 percent reported that training was very important to their organization's success. Yet only 32 percent of the training directors reported they were required to share evaluation results with anyone in management above them.

As training costs increase, so does the need to evaluate the effectiveness of an investment in training.

> If we can't measure the contribution of a training program to the corporate bottom line (usually via increased productivity and quality), then we may have wasted our time and effort (Norton 1990 p 38).

Denora (1979) asserts that the only reason for employers to conduct training is an economic one. Ultimately, business must treat education as an investment, and like any other investment, the value of education is assessed in terms of its return. Koehorst and Verhoeven assert that, "The deeper training costs bite into their [company executives] budgets, the more eager they will be to scrutinize the effectiveness of this big investment"

(1986 p 17). Training is protected from such scrutiny, according to Koehorst and Verhoeven, because of "the favourable image surrounding training". The authors refer to management as a "gullible consumer" when it comes to training (1986 p 7).

To illustrate the need to provide information about the return on money invested in training, Lombardo (1989 p 62) quotes a training manager.

> If there were cutbacks or if the leadership of the company changed, and people were questioning the value of training, then I would need figures.

Training costs are coming under closer scrutiny. According to Fitz-Eng, the people responsible for training will be under increasing pressure from corporate management to prove the value of training programs.

> Productivity improvement is waste management; anything that does not add value is waste. That deceptively simple statement may well determine the destiny of corporate training in this country. Either trainers (and the HR professionals who supervise them) learn how to demonstrate the value-adding aspects of training, or they face the inevitable discovery that trainers are a 'waste' (Fitz-Eng 1988 p 17).

Bloomberg also states that training investments must hold their own with all other investments that the company makes. There is no preferred status for expenditures on training.

> Corporate education must have economic worth to be considered of value. In a business sense, investment in human capital seeks a measurable and positive end result in enhanced business profits... Investment in human capital must prove economically superior to alternative investments in land or other resources (1989 p 90).

Companies are searching for a payback on money invested in training. "The question of whether employees need more training inevitably comes down to time and money. Will the time and money you invest today in training be repaid--with interest--in the next week, month, year or decade?" (Haslett 1992 p 53) According to Bloomberg (1989 p 93), benefits to the company include both the tangible benefits of increased

productivity and reduced employee turnover, as well as the intangible benefits of an increase in discipline and a decrease in workplace hazards.

College Interests

The college administration and faculty share many interests in developing viable training programs. Both benefit from the college's potential as a valued supplier of business and industry training and from the increased revenues these programs generate.

Contract training provides an alternate source of revenue at a time when traditional government grants to the community colleges are declining, . A study for the American Society for Training and Development (ASTD) found that industries across the country spend about 1.4 percent of their total payroll on all types of training activities, and that 31 percent of these same activities are being purchased from outside their own organizations. Community colleges provide about 15.5 percent of these purchased services or about 5 percent of the total training dollars expended by industry (Carnevale and Gainer 1989). Edling (1991 p 30) predicts that community colleges should be able to at least double that market share. Beckman and Doucette cite a survey conducted by the League for Innovation in the Community College. "Ten to 15 percent of the respondents reported large programs training several thousands of employees in contracts worth over a million dollars" (1993 p 1).

By establishing a niche for themselves as industrial trainers, the colleges can earn a place as economic developers within a community.

> ATCs (advanced technology centers) must maintain programs and employ faculty willing to measure up to world-class standards as millions of workers return to the classroom over the next decade. The ability of ATCs to deliver service at this level may well determine whether communities keep the industry they have and are capable of attracting new industry (Chrestman 1991 p 35) .

Smith writes about the colleges positioning themselves as industrial trainers in a community.

> In March 1991, the CEOs of 12 community colleges formed the NCATC (National Council of Advanced Technology Centers) Presidents Council. They selected as the purpose of their organization 'to position community, junior, and technical college advanced technology centers as a primary deliverer of technology training and technology transfer to ensure the competitive posture of American industry in the global economy' (Smith 1991 p 21).

Since 1991 Honeywell Canada has had a partnership with Humber College whereby Humber provides college-level courses to all employees--hourly and managerial--giving them an opportunity to earn college credentials. Nopper envisions partnerships between Humber College and Honeywell being created to develop teams with skills to conduct needs assessments and to trouble-shoot industrial training programs at Honeywell and other industries.

> A long-term vision foresees the possibility of creating an integrated Honeywell/Humber College faculty, composed of Honeywell trainers and college instructors, and specializing in manufacturing excellence. Besides teaching, such a faculty team could help the company identify and solve problems with the existing educational strategy, recommend new directions, and determine additional skills and courses needed by employees (Nopper 1993 p 58).

Contract training programs can be viewed as a college professional development resource that offers faculty the opportunity to update their content and presentation skills.

> Because ATCs meet the needs of so many clients outside the college, many institutions have come to recognize the advanced technology center as an internal resource. ATCs can furnish services ranging from professional development to computer programming for the rest of the college (Smith 1991 p 21).

Differences arise concerning the issue of control of these training programs. Who should control them? Should control be shared among the administration, the faculty and the customers? Contract training and customized job training programs provide instruction for employees of a company. The program courses are usually non credit,

delivered on company premises, and shorter and less theoretical than regular community college courses (Kopecek, 1984).

The employer, as customer, typically has a great deal of control over the training program. At the community college, the issues revolve around instruction. The question is who should design, control, implement, and benefit from the instructional process. Conflicts arise when the business culture of the college training department clashes with the academic culture of the college faculty.

> At the community college, the most salient differences between the business-and-industry-oriented programs and the rest of the college is the B/I units' outward, responsive focus and their hierarchical, "business-like" organization. In contrast to the collegial use of faculty committees on the rest of the campus, in the B/I unit, decisions are made by the director or by a staff member, and the decision maker generally extends more decision-making authority to the company than to the instructor (Teitel 1989 p 53).

The clashes between the cultures and assumptions of industry and colleges are described by Hamm and Tolle-Burger in an industrial training handbook for colleges.

> Most college instructors, living beneath the umbrella of "academic freedom," are accustomed to prescribing for students information and methods of learning that they independently believe to be important. While this is appropriate behavior for the classroom, it will not be suitable for commerce and industry. Here we note, then, another major difference between your two worlds: in industry, industry controls! Industry will expect to influence the training content, the choice of instructor, the delivery method and the place and time of the activity, since industry will be paying the cost [Hamm and Tolle-Burger, 1988, p.14].

The entire college community potentially gains from the revenues which can be generated by industrial training activity; however, problems arise around two issues: Who will control the training activities in the College?, and how will the clash between the "business culture" and the "academic culture" be resolved?

EVALUATION OF TRAINING

History

The industrialization of society at the beginning of the twentieth century required the training of large numbers of skilled and semiskilled workers. Charles Allen developed techniques to design and evaluate industrial training. These training techniques analyzed only the visible psychomotor aspects of jobs. Training objectives were developed based on these visible psychomotor skills. Allen mentions knowledge and attitudinal objectives only in passing. The emphasis of the training was on the terminal skills, not on how the trainees would learn those skills (Purcel 1987 p 28). Training programs must involve more than setting goals and measuring whether or not those goals have been accomplished. Purcel draws the analogy of "developing goals for an airplane and determining its flight characteristics, but leaving out the design plan for the plane " (1987 p 29).

As industrial and service jobs become more technical, the nature of occupations has changed. Psychomotor skills are still important, but cognitive and affective skills are increasing in importance. Strassmann (1985) describes instructional design procedures which focus on psychomotor skills to the exclusion of cognitive and affective skills, and discusses some of the assumptions about productivity that underlie the evaluation of training.

> The underlying assumptions about what "productivity" is go back to the industrial-age model of what a person, aided by a machine, does. [They were that] the handling of complexity requires information which is a manager's, not a worker's, prerogative. A person's superior coordination of eye and hand are what wages will purchase--until improved machines buy it for less. A person's brain is not a valuable asset per se under such assumptions, because the engineer designs into the manufacturing sequence everything which needs to be done. The employee's thinking is only useful insofar as it retains simple procedural instructions (p 103-104).

Training was concerned solely with psychomotor skill objectives--making the worker a better machine. Concern about knowledge and attitude objectives would come later.

Establishing Evaluation Criteria

Evaluation criteria are necessary to determine the effectiveness of training programs. This study proposes to determine the criteria by which people involved with business and industry training measure its effectiveness. Evaluation, according to Ayers "...means collecting, organizing, analyzing, and reporting data about a number of features of the instructional program and its impact on the participants" (1989 p 1). Evaluation of training should answer two questions, according to Bryan: "Does the student meet the objectives that were established during the planning stage? and, how good a job did the trainer do as an instructor?" (1985 p 7).

The evaluation of training is closely tied with the setting of trainee performance objectives and the evaluation of those objectives. The process of establishing what needs to be taught in a training program is referred to in the literature by such terms as "needs analysis," "performance analysis", "front-end analysis", and "needs assessment". All four terms refer to the process of determining the gap between actual and desired performance (Regalbuto 1992 p 32).

"Front-end analysis" is defined by Korotkin (1992) as a procedure for identifying what needs to be taught. He describes how front-end analysis should be built into job/task analysis procedures. It should be noted that Korotkin's writing appears to be based on the assumption that performance deficiencies can always be solved by training.

Regalbuto (1992 p 33) takes a similar "front-end analysis" approach but with different assumptions. Training is not assumed to be the answer to employee performance problems. Regalbuto starts by asking why the worker is not performing as expected. "A lack of skills or knowledge is only one possible cause of a performance gap. Other possibilities include problems with raw materials, equipment, or work spaces; a lack of money or staff; poorly designed work methods; or insufficient motivation" (Regalbuto 1992 p 30). According to Regalbuto, training will not necessarily solve any of the above problems, and the goal of staff trainers, must always be to improve human performance in the workplace, not just to deliver training.

Kirkpatrick defines four levels of evaluation measurements: reaction, learning, behaviour, and results. Reaction is defined as "...how well the trainees liked a particular training program" (1979 p 78). Learning, he defines as "What principles, facts, and techniques were understood and absorbed by the conferees" (1979 p 82). Kirkpatrick cites examples of learning that do not translate into changes in on-the-job behaviour. Behaviour is an appraisal by the trainee, superiors and subordinates of measurable changes in on-the-job behaviour of the trainee (1979 p 86). Results, according to Kirkpatrick, are the most difficult to measure. He gives two reasons for this. First, "proof" is hard to come by. We might need to settle for indicators or "evidence" that training is effective. Second, it is difficult to separate the effect of training on performance from the effect on performance of all the other things that are happening.

> From an evaluation standpoint, it would be best to evaluate training programs directly in terms of results desired. There are, however, so many complicating factors that it is extremely difficult if not impossible to evaluate certain kinds of programs in terms of results (Kirkpatrick 1979 p 89).

Studies by the Olsten Corporation and the American Society of Training and Development (ASTD) give some idea of the levels of evaluation being used. Olsten Corporation conducted a survey of training evaluation in 433 companies across North

America in 1993. Seventy-two percent of the companies surveyed measured effectiveness by asking trainees to complete a questionnaire (possibly measuring reaction); 30 percent "conduct interviews with participants' managers or supervisors" (measuring application or possibly results), and 26 percent "conduct before and after evaluations" (probably measuring learning) (Olsten Corporation 1993 p 9). The above percentages do not add to 100 because some companies used more than one type of evaluation. Shelton and Alliger (1993 p 43) quote a 1988 study of 300 companies conducted by the American Society of Training and Development which found that "only 20 percent (of the companies) evaluated training in terms of its economic effect on the organization".

Measuring the Results of Training: Evidence Vs. Proof

As we progress through Kirkpatrick's hierarchy, from evaluating reaction to learning, to behaviour, and to results, it becomes more difficult to obtain proof of the effectiveness of training. We may have to settle for obtaining evidence. "As we look at the evaluation of reaction, learning, behavior, and results, we can see that evidence is much easier to obtain than proof. In some cases, proof is impractical and almost impossible to get" (Kirkpatrick 1977 p 9). To get proof that training has been effective, it would be necessary to "measure the conditions before the program and compare with the conditions after the program" (Kirkpatrick 1978 p 8).

A 1990 study, conducted by IBM to evaluate industrial training in six companies, including IBM itself, found that

> even organizations that say they examine the economic impact of training don't do so directly; they rely on people's opinions. Asking trainees whether training has improved their performance or their organization's performance isn't the same as assessing performance directly (Shelton and Alliger 1993 p 43).

Training Is Only One Variable

In order to demonstrate that a training program is effective, it is necessary to eliminate other variables that could affect the change in performance. Just as training is not the only solution to performance problems, neither is it the only variable to affect performance. "If you look at everything that happens after a training program as the result of the training program, you are falling into a classic fallacy... Many interrelated factors affect profit and loss; training is just one" (Hassett 1992 p 54).

When evaluating the effectiveness of training, it is a mistake to ignore the effect of the other variables. How, then, does one separate the effect that training has on performance from the effect of other variables? Kirkpatrick suggests two methods. The first method is to conduct a controlled experiment. "In order to eliminate other factors that could have caused the change, we must use a control group. This means that the control group must be equal to the experimental group regarding any factors that could have caused changes in behaviour" (Kirkpatrick 1977 p 12).

The second method is to try to identify reasons or explanations, other than training, for a change in performance. Something else may have happened between the pre-test and post-test, such as seasonal variation, employee turnover, changes in remuneration, different working conditions, or changes in assigned job responsibilities (Kirkpatrick 1978 p 8). We are left with the likelihood that increased performance is the result of training if other complicating factors can be eliminated.

STUDIES ESTABLISHING CRITERIA

In his 1992 dissertation, Diaz studied the criteria that college administrators and training supervisors from business perceived they were using to measure the effectiveness of contract training programs. The top ten criteria he identified were:

- quality of instruction,
- employee self-esteem,
- marketable skills,
- accessibility, job security,
- meeting company needs,
- employee satisfaction,
- more skilled workforce,
- cost-effectiveness,
- college credentials, and
- improved employee morale (1992 p 85-86).

In his study, Diaz interviews only administrators from industry and the college. He does not investigate the criteria used by the trainees enrolled in, or the trainers who taught business and industry contract training programs. This study is parallel to Diaz (1992) in that it examines the perceptions of criteria used by stakeholders to measure quality of business and industry training programs. This study differs in that it broadens the definition of stakeholders to include trainees and trainers.

The Maricopa County Community College District in Phoenix, Arizona conducted a study of contract training at 16 colleges of the League for Innovation in 1991. This study found that "academic institutions do not aggressively define the market and offer programs to meet specific market demands" (Updike 1991 p 4).

Rivera identified factors important to the success of partnerships between the college and industry as

- needs and skills assessments,

- good communications,

- flexibility and adaptability of the college,

- program and course evaluation, and

- a facilitator who understands both the business and academic worlds (Rivera 1991 p 197).

Rivera interviewed "academic administrators, corporate administrators, project mid-managers, supervisors, faculty and students"(1991 p 103).

The needs assessment was felt by the faculty to be key to the colleges' ability to meet the needs of the corporate client. The corporate clients, however, did not share this view.

> ... especially when the business partner had relatively few dealings with educational programs in general, there was a lack of awareness of the importance of job needs assessment. Some business partners felt they knew what their employees needed and proceeded to contract for those courses (Rivera 1991 p 198).

Evaluations were considered important, especially to the business partners in the Rivera study; however, changes based on the evaluation seemed even more important.

> ... the action taken by the college after the evaluation appeared to be even more important than the evaluation itself. Specifically, did the college take what they said seriously? Was there a change based on critical evaluation (Rivera 1991 p 200)?

The ability of the college to resolve problems quickly was identified as a success factor by all respondents in the Rivera study.

> The college's ability and willingness to resolve a problem based on what was communicated to them by the business frequently seemed to include

not only good listening and communications skills, but also an almost innate understanding of the business needs (Rivera 1991 p 202).

Rivera reports that both corporate and college respondents spoke of the need for a facilitator of the programs. The person in the facilitator position is described as someone familiar with both industry and teaching in the college.

> These persons frequently had backgrounds comparable to the business partner and thus were able to understand and verbalize the policies of both sides of the partnership. ... At best, they were a colleague whose shared business experience coupled with their (sic) academic knowledge made them (sic) a trustworthy expert (Rivera 1991 p 203-204).

This study builds on the work of the previously mentioned researchers. Stakeholders in this study have been interrogated by questionnaire and interview to determine which of the preceding factors they used to determine the effectiveness of contract training programs.

CREDIBILITY OF THE COLLEGES AS TRAINERS AND TROUBLESHOOTERS

Community colleges have the expertise and facilities necessary to supply contract training to business and industry. Mahoney (1984) states that because community colleges have the personnel, the physical facilities, and the status of being part of the higher education community, they are well positioned to meet the training needs of the private sector. Kaplan (1984 p 90) declares that repeat business is a measure of the credibility of the colleges as industrial trainers.

Customized Training -- A New Niche for the Community Colleges

A niche can be defined as the intersection of available resources and demands for services that creates a potential for an organization to exist. The need for training in

business and industry, coupled with the ability of the community colleges to provide such training, is creating such a niche for the community colleges. The Association of Colleges of Applied Arts and Technology of Ontario (ACAATO), in a report titled, Training and Adjustment Renewal for Ontario: A New Role For the Colleges of Applied Arts and Technology, describes the role of the Ontario colleges in workforce training. "Accountable for more than 70 percent of adult training in the province, the college system is a cornerstone of Ontario's human resource development infrastructure (1989 p 3)."

Contract Training Defined

Contract training is a fee-for-service arrangement between the college as a supplier of training and a business as a purchaser of training. Contract training is defined by Warford:

- They (contract training programs) are taught for members of one group, e.g., employees of a company or members of an organization.

- The content of the courses is normally geared specifically to the needs of the client group.

- The services of the community college are priced according to the length of time needed to design, conduct and follow-up the coursework.

- Courses are marketed in a very aggressive manner (1989 p 13).

Contract training is an arrangement made between an organization and a college to provide instruction for the employees of that organization (Traina 1989). Contract training is defined by Aslanian as follows:

> This term refers to an arrangement in which the organization, whether a business, a government agency, or a volunteer association contracts directly with a college for provision of instruction to its employees, its clients, or its members. Training by contract does not include any arrangement in which an individual enrolls in a college course at his or her own initiative and pays tuition charges and other expenses, even if these expenses are subsequently reimbursed. The term as it is used here means

an arrangement by which the organization itself is learning, by arranging
for the education or training for the people for whom its is responsible
(1983 p vii).

The importance of contract training programs to the community colleges has been
examined by prior researchers. In his 1989 doctoral dissertation, Warford used a Delphi
panel of chief executive officers, chief academic officers, and contract training
administrators from 16 colleges within the League for Innovation in the Community
College. Warford came to the following conclusions about contract training in the
League for Innovation colleges:

- contract training programs form significant linkages between colleges
  and industry;

- the fulfillment of college mission is the major motivation for increased
  involvement in these programs; and

- contract training programs are a significant new role for the
  community college with employers, students and the college benefiting
  (1989 p v).

Warford reviewed the state of business and industry contract training in
community colleges, and assessed how these programs were evaluated by a single
stakeholder--college administrators. This study, by contrast, examines criteria used to
measure the quality of industrial training programs at a single college and from the
perspective of four stakeholders--employers, trainees, and trainers, in addition to the
college administrators as investigated by Warford.

Troubleshooting The Training

The section on troubleshooting the training is included because criteria necessary
for evaluating effective training are identified by perceived shortcomings in a program.
For example, inappropriate instructional objectives are evident when instructors do not
obtain data on their students prior to the development of a training course (Norton 1990 p

39). The following questions were raised by training experts consulted prior to writing the questionnaire for this study.

- When trainees return to the job do they get enough support, coaching, and feedback to apply their new skills in the workplace?

- Has the training been based upon a needs assessment that accurately identifies the skills that need to be taught and the skill levels of the trainees?

- Is there enough practice time available for trainees to master the new skills?

- Do work assignments utilize the new skills?

SUMMARY

There are several groups that have a stake in contract training at the community college. Each stakeholder group has a set of criteria by which it measures the effectiveness of a training program. Business and industry training represents a significant new opportunity to generate revenue for the cash-strapped colleges, to provide professional development for college faculty, and to foster economic development for the community. The college must be seen by all stakeholders to have credibility as a trainer.

Evaluation will probably be more meaningful if there is consensus among the stakeholders as to the validity of the criteria used to measure success. If evaluation criteria are to provide meaningful measurements, they should be generated by those who will use them. The criteria used to measure the success of a training program could be the creation of those whose efforts will be measured by them. Imposed criteria will probably not be enthusiastically adopted by those required to use them. Furthermore, there does not seem to be high degree of consensus among all stakeholders as to who should set the training goals.

Evaluation that measures actual results is probably anecdotal at best. The criteria designed to measure the success of training programs must meet the needs of the businesses purchasing the contract training from the college. Ultimately, business must treat education as an investment. If training is to succeed, then the trainees must have the opportunity to apply their newly learned skills on the job. Skills gained through training must ultimately make a measurable difference to the company. Companies are searching for a return on the money that they spend on training. The establishment of criteria will provide a measure of the success of training programs in meeting their goals and objectives.

CHAPTER 3 : DESIGN AND METHODOLOGY

The research strategies of this study are described in chapter three. These include design of the study, development of the research protocol, data collection methods, data analysis strategies, and a description of the cases investigated.

DESIGN OF THE STUDY

This is an exploratory study to investigate the non-formal criteria used by stakeholders to measure the success of contract training programs. This study is conducted using the case study format as described by Yin (1988). The research design consists of four case studies, each having four units of analysis. This multiple-case design allows comparison of the criteria used by the stakeholders of four training programs. Four stakeholder groups are studied in each of the four cases.

In setting up the case study, it was decided to investigate only programs which had been running for at least one year. By using this minimum period, it was felt that stakeholders would have had time to develop criteria. Further, programs were selected such that each of the four programs is represented by a different account manager. The number of programs meeting these two criteria available for study was small. Contract training programs are customized to the needs of the company and are, therefore, unique. There was a great diversity among stakeholder groups. Across training programs, differences existed concerning the type of material that was taught. Furthermore, there were considerable differences among respondents regarding education, literacy and reading levels. For these reasons, obtaining a random sample to conduct a survey or experiment was not realistic.

Selection of Cases

Preference was given to training programs that met the following criteria:

- programs were fee-for-service contract training programs for employees, not government sponsored training programs for the unemployed,

- programs were of at least one year duration,

- programs were at least three quarters complete so that participants had time to develop evaluation criteria, and

- participants returned to work between sessions to practice and acquire confidence in the skills acquired.

The researcher, in conducting the pilot study, found that respondents needed time to articulate the criteria that they used to evaluate the training programs. They needed to be able to think not only about how they measured success but also about why they chose the method of measuring. Based on the findings of the pilot study, the researcher concluded that neither a questionnaire nor an interview alone would elicit this information and that both would be required to acquire the data needed.

Stakeholder Groups Involved in Each Case

This study investigates the evaluation criteria for a training program held by two stakeholder groups from industry and two from a college. Stakeholder groups are defined as those people directly involved with the training program.

The stakeholder groups from industry are the employers and the trainees. The interests of the employers are represented in this study by the training manager or person responsible for contracting the training and liaising with the college. The interests of the

employees are represented in this study by the trainees enrolled in the training program. The stakeholders for the college, are represented by the account manager and the trainer assigned to the training program. The account managers at the Business and Industry Services (B&IS) sell and supervise the contract training programs delivered by Humber College. The trainers in this study were those instructors assigned to the training programs by the college. In two cases, trainers were full-time faculty at Humber College.

The respondents in this study were the stakeholders involved in the four training programs at the B&IS being studied. In summary, the stakeholders for each training program include: (1) the employer or representative of the company responsible for purchasing contract training, (2) the trainees of those companies who attend the training sessions, (3) the account manager at the community college who sells and facilitates the program, and (4) the trainer who presents the program.

DEVELOPMENT OF THE RESEARCH PROTOCOL

The research protocol used in this research study was developed by conducting a literature search, validating the preliminary questionnaires with an expert panel, and pilot testing the protocol with stakeholders in a training program not associated with the four cases that comprised this study.

Literature regarding the evaluation of training was examined to explore the issues surrounding evaluation, and to develop meaningful questions about the topic. The expert panel which validated the questionnaire was comprised of:

- Humber faculty and staff associated with industrial training from the Business and Industry Services (B&IS) division and the Technology division,

- the Director of Research and Development at Humber College,

- a staff member of the R & D office at Humber College, and

- the Director of Training and Development of a large engineering consulting company in Toronto that competes with Humber College in the industrial training market.

Pilot Study

Following finalization of the questionnaires, a pilot study was conducted to test for inadequacies in the original research design and to refine the data collection methods. The interview procedure was tested on the four stakeholder groups of a training program that was not part of this study.

In the initial pilot study, data collection was conducted using only questions posed in an interview. The researcher was not satisfied with the quality of the responses obtained. Therefore, it was decided to present the questions to the respondents in the form of a written questionnaire that they could complete prior to an interview. A second pilot, used a written questionnaire followed by an interview. Better quality responses were produced when respondents had time to think about the questions and respond in writing before the interview.

Many of the trainees had little formal education and some had difficulty understanding the questions. Further revisions were made to the written questionnaire and interview protocol to clarify the meaning of several questions and to simplify the language used in order to accommodate the wide range of respondent reading levels.

METHODS OF DATA COLLECTION

Data was collected using a separate questionnaire for each stakeholder group. The questionnaires were followed by structured interviews in which the respondents were given an opportunity to elaborate and clarify their questionnaire responses.

Validity

This study attempts to increase validity by using two sources of evidence (Yin 1989 p 42)--questionnaires and interviews. Participants were asked to respond in writing to a questionnaire and had an opportunity to read and react to the questions prior to an interview. Interviews followed in which participants were able to clarify or elaborate their written responses. Using two sources--questionnaire and the interview--enabled the researcher to clarify meaning and to gain a greater depth of understanding of the responses than could be achieved through written or interview responses alone.

Samples of the questionnaires are included in the appendices.

Reliability

The use of both questionnaires and interviews increases the likelihood that stakeholders would give similar responses if the study was repeated. Respondents had the opportunity to write their answers to the questionnaire prior to the interview. The researcher had the opportunity to probe questionnaire responses, or lack of responses, during the interviews. Interviews were taped and then transcribed.

Generalizability

The case study, like the experiment, does not represent a "sample", and the investigator's goal is to expand and generalize theories (analytic generalizations) and not to enumerate frequencies (statistical generalizations) (Yin 1988 p 21).

Field Procedures

The vice-president in charge of the Business and Industry Services division of Humber College, the Director of the Canadian Plastics Training Centre, and the Manufacturing Business Team Leader at the B&IS provided the cases for this study. These individuals put the researcher in touch with the account managers responsible for the training programs. These account managers arranged the researcher's contacts with the trainers, employers, and trainees.

The researcher attempted to standardize the data collection procedures to ensure consistency across the four cases studied and to enable the case study to be replicated by another researcher. Interviews were conducted in settings that were familiar and comfortable to each stakeholder group. Trainees were interviewed as a group. The other three stakeholders for each case were interviewed individually.

Questionnaires were administered by the researcher to each trainee class as a group. Trainee questionnaires were anonymous. They were given as much time as they needed to complete the questionnaire. The class was interviewed as a group during one of their regularly scheduled class times because the pilot studies had shown this method to be less threatening and to produce better responses. To ensure confidentiality, all data collection from trainees was done without the employer, account manager, or trainer present.

Questionnaires were sent to the employers by the appropriate account manager at the B&IS. After they had time to answer the questions, employers or representatives were then interviewed by the researcher at their offices at a time of their convenience. Trainers and account managers were given the questionnaire and had interview appointments arranged by the researcher.

Data at all interviews was collected by the researcher by using a pocket-sized tape recorder and by taking notes . Permission of the respondents was obtained prior to taping sessions. The tape recorder was placed on the desk and not touched during the interview so that it did not become a distraction. Following the interview, the tape was transcribed by the researcher.

STRATEGIES USED TO ANALYZE DATA

The analysis is organized in a manner consistent with the original research questions.

Method of Data Analysis

1. For the first research question, evaluation criteria for which there was consensus have been listed and described by stakeholder group. Consensus within a stakeholder group was assumed to be agreement by at least three quarters of the stakeholder group.

2. For the second research question, there was a discussion of the level of consensus among all the stakeholders in this study. Consensus was assumed to be agreement of at least three quarters of each of the stakeholder groups. Partial consensus was assumed to be agreement of three quarters of the trainees, the employer, and either the trainer or the account manager. The assumption of the researcher was that the most important stakeholders were the trainees and the employer. It was,

therefore, assumed that the responsibility of the college employees, the trainer and the account manager, was to ensure that the training works for the industry stakeholders.

3.   For the third research question, criteria were listed for which there was <u>not</u> consensus but which were important to at least one stakeholder group.

CASES INVESTIGATED

The four cases investigated in this study were contract training programs taught by the Business and Industry Services (B&IS) division at Humber College of Applied Arts and Technology in Etobicoke, a city within Metropolitan Toronto, Ontario, Canada.

Case 1 -- Photographic Processing Plant

Case one was a multi-skilling program to teach nine mechanics, instrument technicians, and electricians who maintain equipment at a large photographic processing plant in Toronto. The goal of the program was to teach tradespeople usable skills in a secondary trade, that is, a trade area outside their own primary trade, so that they could work safely and effectively in the secondary trade area. As originally conceived, the program for the first class was designed to teach a full range of skills in a secondary trade. During that year, the tradespeople had alternated monthly between the classroom and the job where they applied what they learned. This class, the second such class contracted by the photo processing plant, was nearing the end of its one year program. The goal of the second class, the one in this study, has been redefined. The new goal is to teach a smaller set of skills to a much greater degree of proficiency.

Case 2 -- Custom Printing Company

Case two was a two-year, supervisor training program designed to improve the skills of nine first-line supervisors at a Toronto printing company specializing in bank cheques. The program being delivered by Humber was the Canadian Management Development Program which was designed by the Federal Business Development Bank and the Ontario Ministry of Education and Training. Management and trainees had some choice in selecting the courses that would be taught. The program focused on a broad range of front-line supervision skills as opposed to higher-level management skills.

Cases three and four which follow, were programs offered at the Canadian Plastics Training Centre, a department of the Business and Industry Services (B&IS) division, at Humber College. The curriculum was designed by the Society of Plastics Industries and the Ontario Government to provide technical training to people in the Canadian plastics industry. Trainees in the program were from a variety of positions in the plastics industry. They were expected to learn specific skills to set up, operate, and maintain plastic molding equipment. The skills taught were technical in nature, but were supplemented with courses in English, mathematics, and knowledge of the physical and chemical nature of plastics.

Case 3 -- Blow-Molded Plastic Bottle Manufacturer

The five trainees in case three were set-up technicians, machine operators, and materials handlers employed by a manufacturer of blow-molded plastic bottles in Mississauga. The employer wanted to increase the pool of technically skilled employees in the plant and to broaden their skill range. Trainees were expected to learn to set up and

operate the three different types of blow-molding machinery in their workplace. The set up included changing molds, loading and starting the machine, producing the product, and completing a quality control check.

Case 4 -- Injection-Molded Bumper Manufacturer

The six trainees in case four were employed by a company in Guelph which produced bumpers for the auto industry using both injection molding and reaction injection molding processes. The training program included a variety of knowledge and skills. Trainees learned technical skills such as changing molds and setting up equipment, basic chemistry of plastics, mathematics and statistical process control (SPC) skills for use in quality control. Although the company in case four was producing a different product and using a different process from the company in case three, the concerns and goals of the two were similar.

In summary, four cases were studied. Each case was a training program taught by Humber College to a business and industry customer. Respondents in each case were the following: the trainees in the program, the employer representative, the trainer who taught the program, and the account manager from the college. Data was collected from the respondents using questionnaires and interviews. Chapter four contains the results of the questionnaires and the interviews.

CHAPTER 4 : STAKEHOLDER CRITERIA

This chapter contains the findings of the study. Included are criteria important to each of the stakeholder groups, consensus criteria common to all stakeholder groups, and criteria for which there was no consensus but which were important to at least one of the stakeholder groups. The industry stakeholder groups consist of the trainees who attended these training programs and the employers or representatives of the company responsible for purchasing contract training. The college stakeholder groups consist of the trainers who served as teachers in implementing the contract training programs and the account managers at the college responsible for formulating the training contract. This section is an examination of the criteria used by each of the stakeholder groups to assess the quality of the training programs. In each case, questionnaire data is presented first followed by information gathered from interviews.

CRITERIA OF THE TRAINEES

Table 1: Trainee Responses -- Credibility Issues
A total of 29 trainees completed questionnaires.

	Question	yes	no	don't know	no answer
1.	Why did your company come to Humber College Business and Industry Services (B&IS) for this training program? reputation of the college trainers	15	2	12	
	quality of the college facilities	15	6	8	
	previous training programs	14	9	5	1
	some employees are Humber grads	2	9	14	4
	low price	3	5	16	5
	convenient location	7	9	8	5
	Humber was "easy to do business with"	6	2	15	6

The reputation of the college trainers was indicated by half the trainees as a criteria they used to assess the credibility of the college as a training agency. Almost half (fourteen of the twenty nine) of the trainees listed the quality of the training facilities as a measure of the credibility of the college as a training agency.

When interviewed, trainees said that they judge the credibility of the college as a trainer by the quality of the instruction in both the current program and in previous courses or training programs that they have taken at the college. When questioned about what they meant by quality of instruction, trainees said they wanted an instructor who has both technical knowledge and adult education skills. The trainees wanted comfortable learning facilities, but, more importantly, they wanted access to equipment on which to practice the skills they were being taught. Trainees said that such equipment needed to be more available.

Table 2: Trainee Responses -- Needs Assessment Issues
A total of 29 trainees completed questionnaires.

	Question	1	2	3	4	5
11	To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be? 1 - completely; 2 - mostly; 3 - somewhat, 4 - not at all, 5 - no answer	5	10	8	6	
12	To what extent were the following groups involved in setting the training goals? 1 - greatly involved; 2 - involved; 3 - little involved, 4 - not at all management	20	6	1	1	1
	employees	3	11	10	4	1
	licensing agencies	7	3	1	10	8

	Question	yes	no	don't know	no answer
13	Is this program designed to develop: on-the-job skills?	29			
	more knowledge?	29			
	a change in attitudes?	18	8	3	
	multi-skilling?	23	1	5	

During the interviews, trainees were asked questions about their role in the needs assessment for the current program. They were then asked how the needs assessment process could be improved. One group of trainees felt that they had had significant input in the course design phase. "Management gave us a list of 10 or 15 courses. We got to pick so many of one category and so many out of another." In the other three programs,

however, employees did not feel that they had much control over the objectives of the training programs. One trainee said that, "Objectives were set by management and the instructor. We had input, but no sense of control".

Trainees reported that a lack of input from "the people who did the work" resulted in training objectives that were inappropriate. In one group interview, trainees reported that the program needed a narrower focus. They felt that too many topics were being taught and, therefore, not enough time was spent to master the skills they felt that they needed. When questioned about the stated need for more training, trainees responded that the course was probably long enough. What was needed, they felt, was a narrower focus and more practice time. Trainees wanted to eliminate some topics that were "nice to know, but not essential" and use the time to master the skills that they felt were needed to do their jobs.

It is interesting to note that 18 out of 29 trainees cited a need to improve basic skills--a term the trainees use primarily to mean proficiency in mathematics and English. Possibly, needs assessments did not accurately measure the skill levels of trainees entering the training program. Trainees want programs that are appropriate to their skill level and that treat them with respect. Trainees were aware of the deficiencies in their education. They wanted a needs assessment to design training that is at a level they can understand, but at the same time, they wanted to be treated with respect. They reported that they did not want to be "treated like children" or "talked down to". One trainee articulated the following:

> Most of us in this course don't have a lot of education. Many have not finished high school. Instructors should be aware of that. We had a guy teaching SPC (Statistical Process Control). He was way up there (gestures high) and we are down here, right. His expectations and teaching standards were not realistic. Another instructor treated us like kindergarten. He watered things down. He wanted this done -- this done -- this done. I've been 35 years in the work force and I don't want someone coming in here and treating me like a 12 year old. Most of us are coming here because we want to learn something. We have a lot of responsibility every day in the job, in the family, and in life. We come

here and all of a sudden you are in the classroom. You have to sit straight and if you want to go to the washroom, you have to raise your hand.

The trainees were not happy with the needs assessment process. They felt excluded from the process and felt that training objectives were not congruent with their needs.

Table 3: Trainee Responses -- Knowledge, Skills and Attitudes Issues
A total of 29 trainees completed questionnaires.

	Question	1	2	3	4	5
8.	The following are possible outcomes of training programs. How important to the trainees are the following? 1 - very important; 2 - important; 3 little importance, 4 - makes no difference, 5 - no answer increased trainee self-esteem	16	9	3	1	
	increased trainee morale	10	14	4	1	
	trainees have more marketable skills	12	14	2	1	
	having a more skilled workforce	14	10	3		2
	meeting company needs	16	10	1	3	
	multi-skilling	18	6	2	2	1
	college credentials	8	11	7	3	

	Question	yes	no	don't know	no answer
9.	Is this training program a credit course which can lead towards a college certificate or diploma?	12	12	5	
10	If not, would you be interested in a training program which is a credit course?	14	6	5	4

On the questionnaires, at least 75 percent of the trainees rated the following criteria either very important or important: increased self-esteem, increased trainee morale, trainees have more marketable skills, having a more skilled workforce, meeting company needs, and multi-skilling. It is interesting to note the high number of trainees who rated attitude outcomes as either very important or important--25 out of the 29 for increased self-esteem and 24 out of the 29 for increased morale. Slightly fewer than 75 percent of the trainees (19) rated college credentials as an important outcome of the training.

In the interviews, trainees said that personal satisfaction was an important outcome of training programs. One of the trainees interviewed described how the training had increased his confidence in his abilities and given him a great deal of personal satisfaction.

> I look for training to increase my confidence. When I took the mold out of the (injection-molding) machine for the first time, I was proud of myself. When we go back (to the workplace), the others want to know what we learned. We are able to teach the others back at the plant. They really want to know this stuff too. We are the gurus. When we get back, we have everyone at the edge of their seats. They are always looking for something new.

Trainees realized that training that meets the needs of the company is in their best interests. One trainee stated that, "What is beneficial to me is the same as what is beneficial to the company. If I am happy and learning from the training, it's beneficial to the company and beneficial to me."

When interviewed, trainees tended to lump marketable skills and college credentials together. The only way that trainees felt that they have of proving that they have marketable skills was with a credential. Receiving training that leads to a college credential, such as a certificate or a diploma, was something that only half of the trainees thought was either very important or important in the questionnaire. In the interview, however, trainees were passionate about the value of a college credential. A credential is a way for trainees to demonstrate to both present and future employers that they have a marketable skill. Trainees saw a credential as important to their job security.

> In Canada, you need some certificate or paper that proves that you have done apprenticeship or training because that shows that you have certain knowledge and can apply it on the job. It is important because it is a personal goal, but, at the same time, you can show it to someone else.

To some trainees, a credential is a measure of the quality of the course. "So if you got some sort of a ministry certificate or a college credential, it is better than something that just says 'successful candidate'. You would know that you got a bona fide course".

Trainee opinion was divided on the question of whether their existing employers valued training that earned college credentials. One trainee thought that the primary importance of the credential was to secure future employment.

> I think it (a credential) is more important to me than it is to my employer. If they are going to close down tomorrow and I am out in the cold, I have to go to another employer and knock on the door. I have to have something in my hand. I have my experience, but some people couldn't care less.

Another trainee in the same program disagreed with the previous statement. He felt that the training had become very important to the employer because of pressure from the customers. This employer manufactures parts for an American and a Japanese automobile manufacturer.

> The employer does care because they are involved in the ISO 9000 (quality control standard). It is important to the company because their customers (automobile manufacturers) want to know that the company has qualified people. Auto companies are requiring their suppliers to do training.

Another trainee added, "The VP of the company asked if I was going to get a certificate, so I guess he thought it was important".

Trainees recognized the importance of multi-skilling to their employment security. "The more things that you can do for an employer, the more valuable you are."

Table 4: Trainee Responses -- Application of Training on the Job
A total of 29 trainees completed questionnaires.

	Question	yes	no	don't know	no answer
17	When trainees return to the job, what is necessary in terms of feedback, support, and coaching to successfully apply new skills in the workplace?:				
	work assignments that use the new skills	17	4	7	1
	opportunity to team up with another employee	15	7	7	
	supervisor or team leader to coach employees	13	6	9	1
	time available to practice new skills	11	6	12	

Trainees identified on the questionnaire criteria they felt were essential to successfully applying the skills they learned on the job. Over half of the trainees rated both work assignments that use the new skills and the opportunity to team up with another employee as important.

When interviewed, the trainees stressed the importance of a "buddy system" that allowed them to team up with another employee to practice their new skills on the job. Liking the course was very important to the trainees. Trainees want to "learn new skills that we can use on the job." Trainees had little patience with training programs that taught them skills they did not feel they needed. In one of the programs studied, the trainees brought relevant examples from their work to the training.

> We use examples from out in the plant. We take cases from work and everybody bangs it off (discusses it with) everybody else. Sometimes you see the light at the end of the tunnel. Maybe it wasn't your decision, but you learn from it.

Application of new skills depends both on learning the right skills and on having a chance to apply them on the job. Trainees reported that good trainers were able to help them make the link between learning the course material and applying it on the job. The use of "live" case studies was cited as being important by a trainee in a supervisor training program.

Table 5: Trainee Responses -- Assessment of the Impact of Training
A total of 29 trainees completed questionnaires.

	Question	yes	no	don't know	no answer
7.	What measures do you personally use to determine whether a training program has been successful? I liked the course	27	2		
	I learned new skills	27		1	1
	I apply what I learned on the job	26		2	1
	I can do the job better than before	23	1	4	1
	less down-time of equipment	18	5	6	
	lower scrap and re-work costs	11	6	9	3
	product up to specifications	13	6	7	3
	higher productivity	11	8	6	4
	improved company profitability	5	9	6	9

Over three quarters of the trainees measured the impact of training by the following criteria: liking the course, learning new skills, applying what they learned, and performing their jobs better than before. More than half of the trainees said that they used less down-time of the equipment to measure the impact of training.

In the interview, the trainees said that the confidence and ability to solve problems without having to shut down production was a measure of the impact of the training program. Trainees did not have the means to directly assess the impact of training on the company. They said that the companies looked for increases in productivity, but reported that they did not have access to information measuring such changes. In general, they looked for improvements to their own job performance as a result of training. Trainees talked specifically about having the confidence and ability to solve problems without having to shut down production.

Table 6: Trainee Responses -- Troubleshooting the Training
A total of 29 trainees completed questionnaires.

	Question	yes	no	don't know	no answer
22	What more do you need to meet the training objectives?				
	nothing	7	11		11
	more training time	16	11		2
	better instruction	7	20		2
	stronger motivation	5	21		3
	improved basic skills	18	9		2
	more practice time	21	7		1

		1	2	3	4	5
23	Is additional instruction or practice available for those trainees who do not meet the objectives of the program? 1 - as much as required; 2 - some additional; 3 - very little, 4 - none, 5 - no answer	3	15	8	2	1

Almost three quarters of the trainees (21) responded that more practice time was necessary to improve the training programs. Over half of the trainees said that they needed improved basic skills and more training time.

Trainees spoke of the need to learn by doing. Twenty-one of the trainees said that they need more practice time to master the skills learned in the training programs. As one trainee said, "Practice takes time. Sometimes it is trial and error until it sticks and we can do it on the job." Another talked about the difficulty of getting enough practice time on the company equipment.

> We need more practice time, especially on company equipment. You don't get to practice on company equipment. If it breaks down, you try to get it going as fast as possible.

Even in the college training facilities, the trainees do not always get all the practice they would like. One student reported that, "We got to change the mold maybe twice in the two-year program. That is not enough". Trainees reported that they need quality laboratories with equipment to practice and gain confidence with the skills that they learn in training.

CRITERIA OF THE EMPLOYERS

Table 7: Employer Responses -- Credibility Issues
A total of 4 employers completed questionnaires.

	Question	yes	no	don't know	no answer
1.	Why did your company come to Humber College Business and Industry Services (B&IS) for this training program? reputation of the college trainers	2	1		1
	quality of the college facilities	1	1		2
	previous training programs	1	1		2
	some employees are Humber grads	1	1		2
	low price		2		2
	convenient location	2			2
	Humber was "easy to do business with"	1			3
	recommendation from industry	2			2

Half of the employers listed reputation of the college trainers, convenient location, and recommendations from industry as measures of the credibility of Humber College as a trainer.

When interviewed, employers stated the recommendation of a colleague in industry as a primary reason for contracting the college as a trainer. In each case, Humber College had been recommended by another company that had previously used the training services of the college.

The employers felt that by contracting with Humber to do their training, they would have access to the full-time faculty of the college. The employer representative of the photographic processing plant stated that he wanted access to the faculty of the college for his training program. The community colleges have earned a reputation among these employers as technical trainers. That reputation comes in part from the employers being satisfied with the skills possessed by Humber and other community college graduates that they had hired in the past.

The reason we came to the college was to get full-time experienced faculty to teach our training programs. We do not have to pay the college to flip through the Yellow Pages and phone a trainer for us. We can do that ourselves.

Two of the employers spoke of the good working relationships that they had developed with the account manager responsible for coordinating the training program. One remarked that she felt that she had "... an association and a contact with Humber College. I felt that I could call him (the account manager) to straighten out any problems." The same employer contrasted this with her relationship with the community college that had previously run her training programs. She said that she did not feel confident that the trainer from the previous college could be trusted to do the job. "I wasn't getting the details looked after by administration, nor were we seeing a quality trainer. I didn't have the confidence in them that they knew how to pull it off. I wanted someone who was easy to do business with."

Table 8: Employer Responses -- Needs Assessment Issues

A total of 4 employers completed questionnaires.

	Question	1	2	3	4	5
11	To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be? 1 - completely; 2 - mostly; 3 - somewhat, 4 - not at all, 5 - no answer		2	2		
12	To what extent were the following groups involved in setting the training goals? 1 - greatly involved; 2 - involved; 3 - little involved, 4 - not at all management	3	1			
	employees		2	2		
	licensing agencies				3	1

	Question	yes	no	don't know	no answer
13	Is this program designed to develop: on-the-job skills?	4			
	more knowledge?	4			
	a change in attitudes?	3	1		
	multi-skilling?	4			

In the interviews, employers all said that improvements to the needs assessment were required. The importance of conducting a proper needs assessment to ensure the

successful application of skills learned in training was stressed at the interview by the training manager (employer) of the custom printing company.

> I was reluctant to bring in any training because we never did a proper needs analysis. They (headquarters) didn't know what a needs assessment was. The people conducting it (from headquarters) did it at a time when people were nervous about employment.

The manager of the blow-molding company (employer) stressed the need to involve the supervisors of the trainees in planning the training. For training to succeed, the supervisors must feel involved and see the need for the training.

> Skilled technical people have to be involved in the training. They have to be. It is very important that they are involved because long term it will make their job easier. By enlarging the group and improving the technical skills in that group, everyone's job gets a little easier. I think they realize that the sooner and the better that they train the newer group, the easier will be the situation for them.

The training manager (employer) of the custom printing company also stressed the need to involve front-line supervisors in planning the training program.

> What would make a difference? Goals and objectives are set in the utopia of the ivory tower by guys who tell you goals and objectives for the year. We are going to reduce spoilage by such and such or we are going to increase sales by such and such. We don't involve the supervisors. We don't get together with them quarterly and share with them. You know how we find out if things are going wrong? -- when the "shit" hits the fan. That is wrong because there is some tremendous talent and ideas out there about how to run the line. They do the work for you and you don't involve them. They get frustrated because their ideas never get to the managers. They get filtered by their supervisors.

Employers realize the importance of a proper needs assessment, but cite lack of time and expertise as reasons for companies not to conduct them. Employers are looking to the College to supply needs assessment expertise. It is assumed by the employers that the college is capable of conducting quality needs assessments.

Table 9: Employer Responses -- Knowledge, Skills and Attitudes Issues
A total of 4 employers completed questionnaires.

	Question	1	2	3	4	5
8.	The following are possible outcomes of training programs. How important to the company are the following. 1 - very important; . 2 - important; 3 little importance, 4 - makes no difference, 5 - no answer					
	increased trainee self-esteem	2	1			1
	increased trainee morale	3				1
	trainees have more marketable skills	1	2			1
	having a more skilled workforce	4				
	meeting company needs	4				
	multi-skilling	2	1			1
	college credentials	1	1			2

	Question	yes	no	don't know	no answer
9.	Is this training program a credit course which can lead towards a college certificate or diploma?	3	1		
10	If not, would your company be interested in a training program which is a credit course? .	2	1		1

All employers listed a more skilled workforce and meeting company needs as very important criteria. Over three quarters of the employers listed increased trainee self-esteem, increased trainee morale, trainees have more marketable skills, and multi-skilling as either very important or important.

In the interviews, multi-skilling was regarded by employers as an important outcome of training. Employers all spoke of the need for the company to have flexibility in assigning workers to different tasks depending on the requirements of production. The manager (employer) of the plastic bottle manufacturing company said that multi-skilling resulted in not only skills, but also an attitude of confidence on the part of the employee.

> I have three different processes of blow molding and I want my people to be trained in all the processes. I want them to have the right attitude, to be able to take on a new challenge. I want them to have a knowledge of the hydraulics, pneumatics and all other aspects of the machine. My goal here is to cross-train people in all areas of the plant That gives you a lot of flexibility in management. If a guy wants to go in and do a different job, I will certainly give him the opportunity.

The training manager (employer) of the photographic processing company reported a low utilization of skills learned in a multi-skilling training program, but mentioned the safety benefits of multi-skill training.

> The ones that are willing--the go-getters--would have tried to repair the machines regardless of the multi-skilling. The only thing that we have done is to give them the lee-way and teach them the safety aspects of the job.

Employers value training that gives trainees a broader range of skills and gives the company more flexibility, sometimes with fewer workers.

Table 10: Employer Responses -- Assessment of the Application of Training
A total of 4 employers completed questionnaires.

	Question	yes	no	don't know	no answer
17	When trainees return to the job, what is necessary in terms of feedback, support, and coaching to apply their new skills in the workplace?				
	work assignments that use the new skills	2		2	
	opportunity to team up with another employee	3		1	
	supervisor or team leader to coach employees	2		1	1
	time available to practice new skills	3		1	

Three quarters of the employers listed the availability of practice time and the existence of a formal or informal buddy system to enable employees to team up to apply their new skills on the job as essential to the application of skills to the job. Half of the employers said that application of new skills depended on whether or not trainees had work assignments that used the new skills and whether or not the supervisors coached the trainees in applying their new skills on the job.

All employers talked about the importance of applying the newly learned skills on the job. The training manager (employer) of the injection molding company stressed that

application of new skills depended upon trainers making the connection for the trainees between the skills learned in training and those used in the workplace.

> If you want the training to be internalized throughout the company, you have to use the language (of the company). For instance, a lot of us (in management) took the Dale Carnegie course. It really didn't fly. It turned out to be a negative. It didn't use our language and make the connection for us.

The course, it seems, provided knowledge without regard for the values and attitudes of the company. The same employer talked of the need to "motivate" the employees when they return from training.

> Trainees need more motivation from their managers—consistent motivation. A lot of time when we send people for training, they come back and there is no follow-up. They think "why bother" or "what did I take that training for".

When questioned about what she meant by "motivation", the employer talked about the supervisors and managers coaching the employees to use their new skills.

The use of new skills by trainees was stressed by the training manager of the custom printing company. The program was teaching the trainees front-line supervision skills. She spoke of the need to explain to employees how the knowledge and skills learned in the training fit into the values and attitudes of the company.

> It is important to use the skills every day. Many of the factory managers are expecting more from them (the trainees) in terms of communications skills, ordering their own supplies, and getting more involved with purchasing equipment. The managers want the supervisors (trainees) to come to them with recommendations, not just problems.

The manager of the blow-mold bottle manufacturer stressed the necessity of ensuring that the supervisors of the trainees welcome the new skills and not be threatened by them.

> Supervisors are very receptive to the trainees learning new skills. My shift supervisors can't wait to have fully-trained, set-up people on each of their shifts. I like to think that my supervisors are willing to learn from the people in the course. That way the technology will be passed upwards.

The supervisors that I have are all technical people and shouldn't be threatened by learning something new.

The same employer had the following response when asked how he knows whether the skills learned in training are being applied on the job.

I go to the floor and ask them (the trainees) "what are you doing?" and I like to hear the right answer. "This is what I am doing and this is how I am doing it." When I ask the question, I am going to know whether or not they are being trained the way we prefer them to be trained.

It should be noted that this employer was the plant manager, and, as such, had direct control over the hiring and training of the supervisors he mentions. He had the power to create an environment that was receptive to training.

Table 11: Employer Responses -- Assessment of the Impact of Training

A total of 4 employers completed questionnaires.

	Question	yes	no	don't know	no answer
7.	What will your company measure to determine if this training has been worth the cost?				
	trainees liked the course	3			1
	trainees learned new skills	3			1
	trainees apply what they learned on the job	4			
	trainees can do the job better than before	3			1
	less down-time of equipment	4			
	lower scrap and re-work costs	3	1		
	product up to specifications	3	1		
	higher productivity	4			
	improved company profitability	4			

All of the employers said that their companies assessed the impact of training by examining the following: trainees apply what they learn on the job, less down-time of equipment, increases in productivity, and improved company profitability. Three quarters of the employers said that their companies assessed training impact by trainees liking the course and learning new skills. The same proportion of the companies looked

for lower scrap and re-work costs as well as the product being up to specifications. It is interesting to note that employers had no systems to measure most or all of these criteria.

The manager of the blow-mold bottle company defined job performance in terms of the quality of the work and the speed at which it is done.

> I'd like to think that when these guys finish the training that they will be capable of going out there and doing a job in the right time--a quality job. I want them to set up the machine and to produce a part from scratch that is functional and within spec (specifications). I want them to be able to turn the machine over to production in a reasonable time. Over a period of time, the time involved in this work becomes less so that I have longer running times and more efficiency.

The same employer was asked how this data will be collected. He has an informal system of asking supervisors and senior technical people to report on the progress of the employees.

> How will I measure a change in performance? I will be going to the shift supervisors and to my senior technical people and asking them their opinion as to how the employee (trainee) is doing. Is he improving his skills? Is he applying what he is learning? It is a joint evaluation. I will be relying on my supervisors to give me answers about how he (the trainee) is doing.

The training manager at the custom printing company evaluated the impact of training by a more formal system tied to pay increases. The trainees are expected to be more responsible and self-directed.

> We were able to obtain a pay increase for our lead hands (trainees) on the basis of the responsibilities that we want then to handle. Last year, the production manager rated these people a little higher than he had the previous year. I think that, from what I am seeing anyway, that he will let some rope go. He will get them (the trainees) more involved and he will expect more from them. Therefore, I feel that there will be a change in performance because they are going to have to draw on these skills to meet the challenge.

Training received at least part of the credit for the good economic performance of the company, according to the same employer.

> Last year, which was a tough year, was a superior year for this organization in terms of productivity and (economic) well-being at the end

of the year in sales versus expenses. The regional director is crediting a lot of the progress last year to the training.

The most formal system of measuring the impact of training was described by the training manager of the injection-molding bumper manufacturer. This company collects detailed information which the training manager hopes to use to measure the impact of training.

> We are a joint venture between Magna and Ford. Part of Ford's requirement was this monthly QOS (Quality Operating System) report. We find that it is quite a good tool. Every department manager has strategic priorities. Training is a responsibility of Human Resources, but also of the production managers. Every department has a meeting once a month where they bring together data. We can take the training information and compare it with this data. What we do not know is who took the course and what is the entry and exit skill level of the trainee. The thing that is helping us to centralize that is a new purchasing system where I have to sign all requests for training. I check the department budget and whether it helps to meet a goal. I check the individual's performance feedback and whether he wants that (the course) and the manager wants that. When the person returns, HR (Human Resources) follows up to get feedback from that person.

Table 12: Employer Responses -- Troubleshooting the Training
A total of 4 employers completed questionnaires.

	Question	yes	no	don't know	no answer
22	What more do trainees need to meet the training objectives? nothing		2		2
	more training time	1	1		2
	better instruction		1		3
	stronger motivation	1	3		
	improved basic skills		1		3
	more practice time	3			1

		1	2	3	4	5
23	Is additional instruction or practice available for those trainees who do not meet the objectives of the program? 1 - as much as required; 2 - some additional; 3 - very little, 4 - none, 5 - no answer	2		1	1	

Three of the four employers said that more practice time was necessary for trainees to master their new skills. Employers reported in the interviews that they want

trainees to get practice time both during the training sessions and on the job. The barriers to adequate practice time that employers identified were cost, supervisor attitudes toward training, and the demands of production schedules.

Employers stated that practice costs money because of the following reasons: equipment must be purchased or freed up from other uses, training schedules must be lengthened to allow time to practice, and trainees wages must be paid during a longer training program.

Employers reported that supervisors who are responsible for assigning the trainees tasks when they are on the job must support training activities or trainees will not receive adequate on-the-job training time. Two employers reported that supervisors were threatened by trainees learning skills that they themselves did not know. In other cases, employers reported that because supervisors were not involved in the needs assessment, trainees didn't learn skills that the supervisors thought they needed.

Employers said that trainees are assigned to whatever tasks are needed to meet production schedules. Sometimes this means that they do not get a chance to practice the skills learned in training.

CRITERIA OF THE TRAINERS

Table 13: Trainer Responses -- Credibility Issues
A total of 4 trainers completed questionnaires.

	Question	yes	no	don't know	no answer
1.	Why did this client come to Humber College Business and Industry Services (B&IS) for this training program? reputation of the college trainers	3			1
	quality of the college facilities	2			2
	previous training programs	2			2
	some employees are Humber grads	1	1		2
	low price			2	2
	convenient location	2			2
	Humber was "easy to do business with"	1			3

Three quarters of the trainers listed trainer reputation as a criterion used by employers to measure the credibility of the college as a trainer. Half of the trainers stated that previous training programs, convenient location, and trainer reputation were used by employers and employees to measure the credibility of the college as an industrial trainer. A minority of trainers indicated building of a relationship between the trainer and the employer, facility quality, and employees that were graduates of the college as criteria.

According to the trainers interviewed, companies base their opinions of the credibility of the college as a trainer on past experience. The trainers cited examples of companies getting recommendations from other training customers of the college. One trainer said that the employer was "testing Humber's ability to train" by enrolling a few employees in the plastics training program. The trainer for the photo processing company stated that the employer had hired Humber to conduct a major training program because the employer had been satisfied with the quality of a previous training program.

We had delivered a previous program that produced good results. We had re-trained men such as plumbers and bricklayers whose existing trade was no longer used at (the photo processing company). We trained them to become equipment mechanics.

The trainer of the program for the blow-mold bottle manufacturer stated that the college had credibility as an industrial trainer because it was seen as distinctly different from commercial trainers. He felt that the college should take advantage of its abilities to conduct a proper needs assessment and to deliver customized training to meet the specific needs of the customer.

> As part of the community college system, we should be distinctly different from the commercial trainers. In a lot of cases, the commercial trainers make money by selling "buzz-word management"--whatever is the hot new topic this year. The college, by contrast, should be selling credibility, long term relationships, and specific solutions to problems. When we go out and talk to people, we try to clearly identify what that customer needs and then we have to customize something specifically to the needs of that customer.

Trainers feel that the college has a competitive advantage over private trainers because it has the expertise on staff to conduct a needs assessment and create a custom program instead of just to market existing programs.

Table 14: Trainer Responses -- Needs Assessment Issues

A total of 4 trainers completed questionnaires.

	Question	1	2	3	4	5
11	To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be? 1 - completely; 2 - mostly; 3 - somewhat, 4 - not at all, 5 - no answer	1	2	1		
12	To what extent were the following groups involved in setting the training goals: 1 - greatly involved; 2 - involved; 3 - little involved, 4 - not at all management	3		1		
	employees	1	2		4	
	licensing agencies	1			2	1

	Question	yes	no	don't know	no answer
13	Is this program designed to develop: on-the-job skills?	4			
	more knowledge?	3			1
	a change in attitudes?	2		2	
	multi-skilling?	2	1	1	

The trainers all spoke of the importance of improving the needs assessment process. One trainer said that there was a need to achieve consensus and identify

common goals for the training program. The task of the trainer or other person conducting the needs assessment, according to another trainer, is often to change the relationship between the employer and employees from one of conflict towards one of cooperation.

> Shop floor employees will often have a basic conflict relationship established with their employer rather than a cooperative relationship. What I try to do is to make everyone see that the goals of the corporation and the goals of the individual are not that far apart. A successful company means a stable work environment and job security--things that are of direct benefit to the employee.

Only one company, according to the trainers, significantly involved workers in planning the training.

> Usually, trainees are not involved to a great extent. (Training decisions are) usually made by management in association with B&IS (Business and Industry Services) and the instructor involved. In this case, the (custom printing company) likes to think of themselves as a people company. The company decided to go with the program, but trainees were consulted as to what day and time to run the program. They were also given some choice as to what courses would be offered. But the initial decision to have the training was a management decision.

A needs analysis that accurately identifies performance problems is essential if the training program is to hit the target, according to the trainer for the blow-mold bottle manufacturer.

> It's how well you do the original needs assessment that will determine how successful the training program will be. You have to really identify what the problem is and then the solution jumps right out at you. When you do a needs assessment with a company, you have to be open to receive information and not just try to sell something. If you can really direct our training at the problem, you can solve it. If you miss the target of the needs assessment, then you are not going to even come close on the training.

According to the trainer for the photo processing company, a needs assessment must identify the required level of proficiency that trainees must learn in a training program.

> Skill levels are sometimes watered down by trades people because they don't have them. Skill levels can be artificially raised be managers who

think it is necessary. I have had people who want trainees to be able to use a slide rule because they grew up with one, even though everyone now uses a calculator. I teach what is needed from my analysis on the floor.

What skills are required to do a needs assessment? According to the trainer for the printing company, successful needs assessment requires skills in three areas.

The needs assessor must have industrial experience to understand the business and its particular problems and training needs. He or she must be able to draw relevant examples for study. It takes expertise in curriculum development. Also, it takes someone who has experience with teaching adults. You need to know how adults learn.

All trainers spoke about the need to accurately assess the skills that students bring to the training. In many instances, trainers felt that at least some of the students lacked the basic skills necessary to master the skills being taught in the training programs. The trainer for the injection-molding company spoke of the need to improve the basic skills of the trainees.

Students (trainees) have very little knowledge about the basic principles of the equipment. They know very little about basic electricity or about the hydraulic or pneumatic areas of the machine. They need more training in these basic areas--basic physics really. I don't know where to start teaching.

This assessment by the trainer is consistent with the trainees own assessment of their basic skills. Trainees reported that they needed improved skills in mathematics, English, and basic science to master the knowledge and skills taught in the training programs.

Table 15: Trainer Responses -- Knowledge, Skills and Attitude Issues

A total of 4 trainers completed questionnaires.

	Question	1	2	3	4	5
8.	The following are possible outcomes of training programs. How important to you are the following? 1 - very important; 2 - important; 3 little importance, 4 - makes no difference, 5 - no answer increased trainee self-esteem	4				
	increased trainee morale	2	2			
	trainees have more marketable skills	3	1			
	having a more skilled workforce	1	2	1		
	meeting company needs	1	2	1		
	multi-skilling	1	3			
	college credentials	2	1	1		

	Question	yes	no	don't know	no answer
9.	Is this training program a credit course which can lead towards a college certificate or diploma?	3	1		
10	If not, would this client be interested in a training program which is a credit course?	3	1		

All of the trainers listed increased trainee self-esteem, increased trainee morale, trainees having more marketable skills, and multi-skilling as being either very important or important. Three quarters of the trainers listed college credentials, meeting company needs, and having a more skilled workforce as being very important or important.

The trainers who are full-time college faculty are in a position to be able to compare the criteria used by industry training programs with those used by the academic programs of the college. The meeting of company needs, to one instructor, has a great deal to do with meeting deadlines and not just with producing the finest product without regard for time deadlines.

> Industrial criteria have nothing to do with excellence. They have everything to do with meeting a deadline. It has to be fit for the job and it has to run at (production) line speed efficiently and with no down-time. The college tends to look at standards which are as high as possible.

The trainer for the printing company reported that the company is interested in providing credit courses for their employees. They are willing to pay the tuition fees for

any work-related courses the employee wishes to take. For at least the first few credit courses, the company is willing to let the employees attend classes on work time.

> The company is prepared to give the trainees a few courses on company time--enough to give them one or two courses, and then they are on their own.

There are several instances of programs at the B&IS in which companies have shared the time with the trainees so that the company paid half the training time.

The issue of who controls the credit courses of the college was raised by one trainer--a long time faculty member at the college. He cautioned against lowering the standards of the college in order to sell credit courses to industry.

> (The college's academic) divisions will decide what is a credit course. We may customize examples and case study material to the individual client. We will add pieces to it to meet their needs, but the basic course stays the same.

Trainers said that the college must prove its ability as a trainer for industry by meeting industry training criteria. In doing this, however, academic standards of college credentials must not be compromised.

Table 16: Trainer Responses -- Assessment of the Application of Training
A total of 4 trainers completed questionnaires.

	Question	yes	no	don't know	no answer
17	When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace?				
	work assignments that use the new skills	1	1	2	
	opportunity to team up with another employee	3		1	
	supervisor or team leader to coach employees		1	3	
	time available to practice new skills	1		3	

Three of the four trainers said that the application of the training on the job depended on the trainees having an opportunity to team up with another employee to practice the new skills on the job. The existence of such a "buddy system" was felt to be key to the application of the new learnings to the job.

The trainer for the blow-mold injection company spoke of the importance of a work environment that both is receptive to the new skills and rewards a trainee for using those new skills on the job.

> Trainees come here for a week of training. They go back to their job for three or four weeks; then they come back. I ask them "What type of problems did you have at work and how did you apply what you learned in class?" They tell me that they have more confidence to handle the job.

The trainer for the blow-mold injection company talked about the importance of a work environment that is receptive to the new skills of the trainees.

> Once they get back into that work environment, if the work environment is not receptive to what they have learned, then they pretty soon forget. You get what you reward in the world, and if there is no reward for using their new knowledge, then they won't use it.

The trainer for the injection molding company also stressed the need to create an environment conducive to training. To do this, he said, training must start at the top of the organization.

> This company is training people to be moved into supervisors' positions. They are learning things that their supervisors do not know. Companies have a tendency to continuously train the wrong people. They train the lowest levels first. Only one company, in my experience, started training in the right place and that is the president's office, then the general managers, and working on down. The company must develop a long term strategy and sell the people who have the ability to make the training successful or not. No matter what I do with these five or six supervisors, the training will have very little effect if the environment they return to at work is not conducive to drawing from them the best results of the training. After six months, the training might as well not have happened.

Trainers all talked of the need to make connections for the trainees between the training and their jobs. The trainer for the injection molding company gives assignments to trainees for which they must collect data from their work.

> I give assignments where trainees must collect data from the plant, analyze that data as part of the class, and apply what they learned back on the job.

Trainers must know the trainees and where they work. The trainer for the printing company chose case studies from the workplace. He spent time on the shop floor outside class times to search out topics that illustrated the training topics.

> I have a fairly broad background in industry, so I go out and look at the equipment and the types of activities. I get a feel for what is going on in the shop. I look at their productivity level and then criticize it or compliment it. I will use one of their machines or processes as an example to explain what I am trying to get across.

Trainers talked of the need to create a workplace culture that encourages and rewards trainees to use their new skills on the job. According to the trainers, the key is to start the training at the top of the organization.

Table 17: Trainer Responses -- Assessment of the Impact of Training

A total of 4 trainers completed questionnaires.

	Question	yes	no	don't know	no answer
7.	What measures do you use to determine whether a training program has been successful? trainees liked the course	4			
	trainees learned new skills	4			
	trainees apply what they learned on the job	4			
	trainees can do the job better than before	3		1	
	less down-time of equipment	3		1	
	lower scrap and re-work costs	3		1	
	product up to specifications	1		3	
	higher productivity	3		1	
	improved company profitability	3		1	

All of the trainers assessed the impact of the training by looking for evidence that the trainees liked the course, learned new skills, and applied what they learned on the job. Three quarters of the trainers said that they determined the impact of the training program by whether the trainees could perform their job better than before, less down-time of equipment, lower scrap and re-work costs, higher productivity and improved company profitability.

The trainers reported in the interviews that they have no direct way of assessing the impact of the training program. They must rely on what they hear from the trainees and the employer.

According to the trainer for the blow-mold injection company, the necessity of evaluating the impact of training has changed since the perception of training by an employer moved from being a job benefit for employees to being an investment for the company.

> The evaluation of training has changed. Companies are demanding more value for the money spent on training. Ten years ago, training was often a prize. You went away on vacation for two or three days, learned something and came back. If you never used it, nobody really cared. Training was viewed as a bonus and not something that was going to make a great deal of difference. Today, that is no longer the case. A lot of people are doing training because their customers require them to do that training. For example, the auto companies have laid requirements on their suppliers in the last ten or twelve years that they have never seen the like of before.

The same trainer said that evaluation is starting to measure changes in the post training behaviour of the trainees.

> When I was in industry, the way that I would measure the success or failure of a training seminar was by a change in behaviour on the shop floor. I would look for a measurable change in an area that was important to me. I looked for an increase in production efficiency or an increase in quality--measurable, identifiable, numbers-related improvement. There are some areas of training where you don't get a numbers-related improvement, but you can measure things like:

- an improvement in relationships,
- a change in the methods of management used,
- a decrease in the number of grievances, absentees and accidents, and
- a change in attitude--increased awareness of surroundings--of the hazards of machinery and chemicals.

Trainers have perceived changes in industry attitudes towards the evaluation of the training. As training becomes both more essential to company survival and more costly, there is a perceived need for more effective evaluation systems. Trainers and account managers are not always following up on such data. It is far from certain that the employers have the skills necessary to gather this information.

Table 18: Trainer Responses -- Troubleshooting the Training

A total of 4 trainers completed questionnaires.

	Question	yes	no	don't know	no answer
22	What more do trainees need to meet the training objectives? nothing		3		1
	more training time	2	2		
	better instruction	1	2		1
	stronger motivation	1	3		
	improved basic skills	1	2		1
	more practice time	4			

	Question	1	2	3	4	5
23	Is additional instruction or practice available for those trainees who do not meet the objectives of the program? 1 - as much as required; 2 - some additional; 3 - very little, 4 - none, 5 - no answer	1	3			

All of the trainers stated that trainees needed more time to practice the skills they learned in the training program. Trainers reported that practice time is not available for the following reasons: lack of equipment and inadequate needs assessment.

Trainers would like to have more equipment available for practice so that trainees could have more time on the equipment to practice their skills. One trainer reported that he was able to solve the equipment problem by having spare equipment, not currently needed for production, made available to trainees.

Some of the trainers reported that supervisors had not been adequately involved in the needs assessment. As a result, the training program was not teaching skills that the supervisors felt were needed on the job.

CRITERIA OF THE ACCOUNT MANAGERS

Table 19: Account Manager Responses -- Credibility Issues
A total of 4 account managers completed questionnaires.

	Question	yes	no	don't know	no answer
1.	Why did this client come to Humber College Business and Industry Services (B&IS) for this training program? reputation of the college trainers	1		1	2
	quality of the college facilities	2	1		1
	previous training programs	3	1		
	some employees are Humber grads		1	1	2
	low price			1	3
	convenient location	1	1		2
	Humber was "easy to do business with"	3			1
	industry recommendation	2			2

Three of the four account managers listed previous training programs and the ease of doing business as measures of the credibility of Humber College as a trainer for industry. Half of the account managers listed quality of the college facilities and the recommendation from someone in industry as criteria which, in their opinion, were important to the industry stakeholders.

The account manager for the injection molding training program said that the length of time that Humber has been involved in technical training gives the college credibility in the eyes of industry.

> In an environment where trainers come and go, we are stable in the community. We have been here for a long time. We will continue to be.

Another account manager spoke of the comprehensive range of training programs that the college is capable of teaching. Many of the competitors, she said, offer only a limited range of programs, and, usually, programs without labs. The college, however, is not set up to handle much outside training business in its labs. Full-time instructors are generally not receptive to outside trainers using their lab facilities.

Table 20: Account Manager Responses -- Needs Assessment Issues

A total of 4 account managers completed questionnaires.

	Question	1	2	3	4	5
11	To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be? 1 - completely; 2 - mostly; 3 - somewhat, 4 - not at all, 5 - no answer	2			2	
12	To what extent were the following groups involved in setting the training goals? 1 - greatly involved; 2 - involved; 3 - little involved, 4 - not at all management	2	2			
	employees	1		1	2	
	licensing agencies	1	1		2	

	Question	yes	no	don't know	no answer
13	Is this program designed to develop: on-the-job skills?	4			
	more knowledge?	3		1	
	a change in attitudes?	2	1	1	
	multi-skilling?	3	1		

The value of needs assessments varied among the account managers. One opinion was that program development costs were largely unnecessary.

> We get back to the whole thing about material development. We can't afford to start paying these people (faculty) for development. We can't afford to pay for design and development of things that are already available to us at no cost. The cost becomes absolutely extreme to the customer.

Needs assessment, it seems, consisted of asking company management what the training program should include. The issue of needs assessment appears to be a major issue between the account managers and the trainers.

Another opinion, expressed by one account manager, was that the success of a program depends on accurately identifying training needs so that goals and objectives can be established.

> Goals and objectives must reflect some of the company's culture, needs, and wants. They must reflect what the needs assessor was seeing as necessary. If not, your instructor hasn't got a leg to stand on. If you have a good initial document, then you are going to have good training. If the account manager can't figure out what the training needs are and the company can't communicate it, then the training won't hit the mark.

The same account manager said that a needs assessment should consist of the following:

- analysis of the occupation you wish to train to determine terminal goals,

- assessment of the present knowledge, skills and mechanical aptitudes of the trainees, and

- analysis of the company culture and the environment into which the trainees will be returning after the training program.

Training needs are not always obvious to the employers, according to the account managers. The needs assessor must be perceptive and identify what is hidden beneath the surface. She/he must have the ability to probe hidden assumptions that underlie the culture of the company.

> If you are selling to the business world, you need to be up on what is going on there. You need to know the questions to ask. You need to be excellent at asking questions and uncovering not only facts but innuendoes about the culture of the company. The needs assessor needs a knowledge of training and how people learn. She or he needs to be excellent at writing goals and objectives.

There is sometimes a difference between the training that is requested and the training that the account manager feels is required.

> We give the customer what he thinks he wants, and we usually slip in some parts of what he really needs. Somehow we are always at odds with that. Do employers or training managers really know what the employee needs? Often they can't tell them (employees) what their job is. It doesn't help the employee to know what he needs in training if he is never told what his job is.

There was disagreement among the account managers regarding the value of a needs assessment. More fundamentally, there seemed to be disagreement regarding what a needs assessment entails. Account managers defended their positions on needs assessment by saying that companies are not willing to pay the cost of a full needs assessment.

Table 21: Account Manager Responses -- Knowledge, Skills and Attitudes Issues
A total of 4 account managers completed questionnaires.

	Question	1	2	3	4	5
8.	The following are possible outcomes of training programs. How important to you are the following? 1 - very important; 2 - important; 3 little importance, 4 - makes no difference, 5 - no answer increased trainee self-esteem	3	1			
	increased trainee morale	2	1	1		
	trainees have more marketable skills	1	3			
	having a more skilled workforce	4				
	meeting company needs	4				
	multi-skilling	3	1			
	college credentials	1	3			

	Question	yes	no	don't know	no answer
9.	Is this training program a credit course which can lead towards a college certificate or diploma?	2	2		
10	If not, would this client be interested in a training program which is a credit course?	4			

All account managers rated a more skilled workforce and the meeting of company needs as very important to the employers and listed the following criteria as either very important or important: increased trainee self-esteem, college credentials, trainees having more marketable skills, and multi-skilling.

According to the account manager for the blow-molding training program, companies want to function with fewer staff. Machine operators are expected to assume more responsibility for the machines and rely less on maintenance mechanics. Consequently, industries are looking to multi-skilling programs to give employees a wider range of skills.

> Companies are certainly becoming leaner and are not having large staffs of maintenance tradesmen. The operator can now do more of the maintenance. A lot of machines now have PLCs (programmable logic controllers) on them, so the companies want people who will understand the whole process--hydraulic and pneumatics.

College credentials are more important to the trainees than to the employer, according to the account manager of the photo processor company.

College credentials are more important to the individual than to the company. Last year, we had a company asking for credit courses, but that was more of an employee assistance issue or a perk.

According to another account manager, though, college credentials are important

to the employers as well, and the credentials of Humber are highly regarded.

It is important for the employees to get a college credential. I think it is more important to the employer that they (employees) come with a Humber College certificate rather than one from (a private technical college).

Account managers felt that the ability to grant college credentials gives the college a

competitive advantage over private trainers. However, they also report that credentials

are more important to trainees that to employers.

Table 22: Account Manager Responses -- Assessment of the Application of Skills
A total of 4 account managers completed questionnaires.

	Question	yes	no	don't know	no answer
17	When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace? work assignments that use the new skills		3	1	
	opportunity to team up with another employee	1	1	2	
	supervisor or team leader to coach employees	1		3	
	time available to practice new skills		2	2	

All account managers reported in the interviews that a close match between

training and on-the-job needs was either very important or important to the application on

the job of the skills learned in training.

The account managers do not have much control over the application of the skills

learned in training. They all spoke of keeping in touch with the employer and the

trainees, solving problems when they arose, and hoping that the skills were applied on the job following the training.

Table 23: Account Manager Responses -- Assessment of the Impact of Training
A total of 4 account managers completed questionnaires.

		Question	yes	no	don't know	no answer
7.		What measures do you use to determine whether a training program has been successful? trainees liked the course	2			2
		trainees learned new skills	3			1
		trainees apply what I learned on the job	4			
		trainees can do the job better than before	4			
		less down-time of equipment		1		3
		lower scrap and re-work costs		1		3
		product up to specifications	1	1		2
		higher productivity	1	1		2
		improved company profitability		1		3

All account managers assessed the impact of training by whether trainees applied what they learned on the job and could perform their jobs better than before the training.

The account managers were unable to measure the impact of training directly. In the interview, one account manager reported the following means of assessing the impact of training.

> We hear that they are starting to see results on the floor. This employer has a training committee that meets on a weekly basis. They look for a decrease in the amount of scrap. That is something they can measure. Participants are able to manage more of the process as opposed to shutting the machine down. Instead of having to find a maintenance person to have a look at the machine, they can troubleshoot it themselves.

The same account managers reported that the impact of "soft skills", such as leadership training, is harder to measure.

Regarding technical skills, if the fellow runs the machine better or the production line runs more efficiently, it can be assumed to be a benefit of training. With the "soft skills" in the program, it is almost esoteric. Usually companies judge that their employees are a little bit happier and their production levels are up, but it is a short time frame. They notice it right away and then they don't notice if anything has shifted long term.

Table 24: Account Manager Responses -- Troubleshooting the Training

A total of 4 account managers completed questionnaires.

	Question	yes	no	don't know	no answer
22	What more do trainees need to meet the training objectives? nothing		3		1
	more training time	1	2		1
	better instruction		3		1
	stronger motivation	2	1		1
	improved basic skills	2	1		1
	more practice time	3	1		

	Question	1	2	3	4	5
23	Is additional instruction or practice available for those trainees who do not meet the objectives of the program? 1 - as much as required; 2 - some additional; 3 - very little, 4 - none, 5 - no answer	1	2		1	

Three of the account managers stated that trainees needed more time to practice new skills.

Although the need for more practice time was acknowledged by the account managers, all said that an increase in practice time resulted in an increased cost.

You can always increase the amount of training time, but are they (the employers) willing to pay for it? The company knows that these things are important (practice time and training equipment) but time and production needs don't allow it.

Account managers said that employers want the availability of time and equipment for trainees to practice the skills learned, but are unwilling to pay the increased costs involved.

CONSENSUS CRITERIA OF EACH STAKEHOLDER GROUP

Table 25 below lists criteria identified in the questionnaire by at least three quarters of the members of each stakeholder group. In the four programs, there were a total of 29 trainees and four each of trainers, employers, and account managers. The following table summarizes the criteria of each of the stakeholder groups. Criteria listed are those agreed upon by at least three quarters of the stakeholder group. The criteria of the four stakeholder groups are listed together to allow comparison.

Table 25: Consensus* Criteria of Each Stakeholder Group from the Questionnaire

	Industry Stakeholders		College Stakeholders	
	Trainee	**Employers**	**Trainers**	**Account Managers**
Credibility of the College as a Trainer			• trainer reputation	• previous programs • good service
Needs Assessment	• employee involvement • assessment of skills	• employee involvement	• employee involvement • appropriate skill level • knowledge of industry	• employee involvement • knowledge of industry
Change in Knowledge, Skills, and Attitudes	• increased self-esteem • increased morale • met company needs • marketable skills • skilled workforce • multi-skilling	• increased self-esteem • increased morale • met company needs • skilled workforce • multi-skilling	• increased self-esteem • increased morale • met company needs • marketable skills • college credentials • skilled workforce • multi-skilling	• increased self-esteem • increased morale • met company needs • marketable skills • college credentials • skilled workforce • multi-skilling
Application of the Learnings		• buddy system • practice time	• buddy system • work assignments • practice time	• work assignments
Assessment of the Impact of Training	• liked course • learned skills • improved performance • increased productivity • product quality • reduced down-time • learnings applied	• liked course • learned skills • improved performance • increased productivity • product quality • reduced down-time • improved .profitability • less scrap material • learnings applied	• liked course • learned skills • improved performance • increased productivity • reduced down-time • less scrap material • learnings applied	• learned skills • improved performance • learnings applied
Troubleshooting the Training	• practice time	• practice time	• practice time	• practice time

* (at least 75 percent consensus within each stakeholder group)

Table 25 demonstrates that the evaluation criteria of the stakeholder groups, as determined from the questionnaire, are similar. Differences among the stakeholder groups became more apparent from the interviews.

CONSENSUS CRITERIA COMMON TO ALL STAKEHOLDERS

Table 26 lists the criteria on which there is consensus among all stakeholder groups. In this study, consensus is assumed to be agreement by at least three-quarters of the stakeholders in each case. Consensus criteria from the questionnaires and from the interviews was found to differ. The table below lists criteria for which there is consensus among the stakeholders. Criteria identified on the questionnaires are listed in one column and, criteria obtained in the interviews are listed in the other column.

Table 26: Consensus Criteria Across All Stakeholder Groups

	Questionnaire Data *	Interview Data *
Assessment of the Credibility of the College	• none	• none
Needs Assessment Issues	• increased involvement of employees	• increased involvement of employees
Knowledge, Skills, and Attitudes	• increased trainee self-esteem • increased trainee morale • multi-skilling • increased trainee morale • skilled workforce • trainees have more marketable skills	• multi-skilling • college credentials • buddy system
Assessment of the Application of the Training	• trainees learned skills • applied skills on the job	• creating an environment conducive to using skills
Assessment of the Impact of Training	• improved trainee performance	• improved trainee performance
Troubleshooting the Training	• more practice time	• more practice time

* Evaluation Criteria With At Least 75 Percent Consensus Across All Four Programs

Consensus criteria common to both the questionnaires and the interviews included the following: increased employee involvement in the needs assessments process, multi-skilling, improved trainee performance, and a need for more practice time. Several criteria were common to all groups in the questionnaire, but not in the interview. These included the following: increased trainee self-esteem and increased trainee morale.

The interview process allowed stakeholders to identify criteria not listed on the questionnaire. Two criteria identified were:

- the use of a buddy system to aid in the application of new skills to the job, and

- the creation of a climate that is receptive to new skills by training company managers and supervisors first.

NON-CONSENSUS CRITERIA IMPORTANT
TO AT LEAST ONE STAKEHOLDER GROUP

The following table identifies the criteria for which there was not 75 percent consensus, but which were of significant importance to at least one stakeholder group.

Table 27: Non- Consensus Criteria Important to at Least One Stakeholder Group

	Trainees	Employers	Trainers	Account Managers
Credibility	• facility quality • good teaching	• college faculty • good service		 • good service
Needs Assessment				
Knowledge, skills, and attitudes				
Application				
Impact				
Trouble Shooting	• basic skills • treated as adults			

Quality of Teaching and Facilities

Trainees and trainers were concerned with the quality of the teaching facilities. The most important aspect of the facilities was the quality and quantity of the equipment available to practice skills learned in the training program. Trainees wanted to have instructors who both possessed content expertise and instructional skills, and who treated the trainees with respect. It is not suggested that these criteria are unimportant to other stakeholder groups, but rather that these criteria are more important to trainees because they are the ones who deal with trainers and facilities all the time.

Basic Skills

The need for more basic skills training was discussed by trainees in all interviews. Trainees reported that they need to improve their basic skills of English, mathematics, and basic science in order to master the skills being taught in the training program. It was very important to the trainees that such skills be taught in a manner which respects them as adults and does not demean or threaten them. Employers did not seem to be aware of the basic skill deficiencies of their employees, however, trainers and account managers were.

College Faculty

Employers wanted access to the faculty of the college. The community college has earned a reputation with employers and trainees as technical trainers through its post-

secondary and apprenticeship programs. Access to the expertise of the college faculty who teach these programs was wanted by employers.

Good Service

Employers demanded effective and efficient service from the college. The account managers were aware of the importance of giving good service to the business and industry clients of the college. They realized that the college must be able to handle quickly and effectively any problems that arise.

Summary

Tis chapter has contained descriptions of the criteria used by each of the stakeholder groups to assess the quality of a training program. Consensus criteria listed are those which all stakeholder groups agreed were important. Chapter five contains a summary of the results. Conclusions are drawn from the data. Recommendations based on those conclusions are presented.

CHAPTER 5 : SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY OF THE FINDINGS

Trainees

Trainees felt excluded from the decisions made regarding training programs. They said that a lack of meaningful input into the needs assessment process resulted in less employee commitment to and the inclusion of inappropriate objectives in the programs.

Instructional issues of teaching and facilities were important to the trainees. Trainees insisted on being treated as adults and were highly critical of trainers who failed to do so. Trainees reported that they needed improved basic skills such as mathematics, English and basic science to master the skills being taught in training programs. It is important to note that the employers did not identify basic skills as a need. The availability of equipment and time to practice the new skills were both highly valued by trainees.

Trainees perceived a college credential to be a symbol of personal accomplishment and future job security. They reported that credentials were probably more important to them than to the employers. This was found to be accurate. Trainees reported that the greatest barrier to the application of training on the job was the lack of an environment which supported and encouraged the use of new skills. The key to creating such an environment, according to all stakeholders, was the training of supervisors prior to training employees.

Trainees judged the effectiveness of the training program by improvement in their own job performance. They reported increases in both personal satisfaction and status within the organization as a result of the training programs. They did not have access to information regarding productivity and company performance in order to judge the impact of training.

Employers

The community colleges have a good reputation as technical trainers with the employers. Employers based this reputation on previous training programs and the quality of employees who were graduates of post-secondary and apprenticeship programs at the community colleges. Employers talked of "testing the ability of the college to train". They reported that they were looking for good service and access to the expertise of the college faculty.

Employers identified deficiencies in the needs assessment process. They stated that they wanted the college to be more of a "physician" to assess the symptoms of the company, diagnose the root problems, and prescribe training to solve the problems. Most of the employers in this study reported that they did not have as much control over the needs assessment process as they would like. They said that the "training agenda" of more senior management was imposed, sometimes to the detriment of the training program.

The employers identified a need for better systems to apply and evaluate training. They were of the opinion that companies must learn to create a climate in which the trainees are encouraged to apply and further develop their newly learned skills. Employers were seeking ways to integrate the evaluation of training programs into

existing evaluation systems within the company such as employee performance reviews and quality control systems.

Trainers

Trainers believed that the college needed to improve its needs assessment process. They reported that the college has a competitive advantage over private trainers in its expertise to conduct a proper needs assessment. Training, they said must teach the right skill at the right level. To ensure this, trainees and their supervisors must have input into the needs assessment process. Trainers said that they required an accurate assessment of the pre-training skill levels of the trainees in order to develop and provide effective training. They felt that for training to succeed an assessment of the company culture to which the trainees will return was needed. To create a climate that encourages trainees to use their new skills, trainers stated that training in a company should probably begin higher up the hierarchy, with the managers and supervisors.

Account Managers

The account managers seemed confused and frustrated by the needs assessment process--confused because there was a real difference of opinion as to what constitutes an effective needs assessment, and frustrated because companies wanted a full needs assessment but were, reportedly, unwilling to pay the costs.

Account managers appeared to perceive their role to be facilitating the delivery of training. It is interesting to note that, for the most part, account managers did not seem to include pre-training needs assessment or the application and evaluation of the training after the training as part of their job.

CONCLUSIONS

The criteria selected by stakeholders in this study indicate an opportunity for the college to broaden its focus beyond that of a deliverer of training. There appears to be a role for the college in diagnosing company needs, devising systems for applying the training, and tracking performance improvements that result from training.

Improving the Needs Assessment Process

The needs assessment process might be improved by involving employees in the needs assessment, measuring pre-training skill levels of trainees, and developing the skills of needs assessors.

Involvement of the Trainees in the Needs Assessment Process

Greater involvement of the trainees in the needs assessment could result in greater commitment of the trainees to the training program as well as an increase in the appropriateness of the training goals and objectives. The trainees felt alienated from the process of needs assessment, either being ignored or asked only for token input. As the people closest to the work, they felt they had a real contribution to make.

Trainees believed that the training programs had too many objectives as a result of insufficient employee involvement. Too many things were being taught at a knowledge level, and not enough time was being spent on any one topic to allow the development of usable skills that could be applied to the job. Employers agreed it was easy to have too many objectives if the people who do the job were not consulted during the needs assessment stage. Management people are not always familiar with the jobs that trainees

do and the skills they require. They can fall into the trap of adding objectives to the course in the mistaken view that they are improving it. The result is that the trainees do not have sufficient time to develop usable skills in any area. Needs assessment should involve the workers, not those at the corporate level. The people doing the work and the supervisors who assign and oversee that work must have meaningful input into the needs assessment, otherwise the program will not benefit from their ideas. Trainees are less likely to feel committed to a training program to which they have no meaningful input.

Assessing the Pre-training Skill Level of Employees

The success of training programs could be improved by better assessment of the pre-training skill level of the trainees. Trainees wanted training that met their specific job needs and was targeted to their current level of expertise. Tailoring a program to individual needs presents both benefits and pitfalls. Both companies and trainees could probably have been benefited by customizing the programs. Objectives could have taken into account both the existing skill level of the trainee and the requirements of the job he/she performs.

Such customizing requires assessment and placement tests. Employers and account managers both felt that such testing might have been opposed by the trainees, especially in a unionized environment. Trainees feared the consequences of obtaining assessment test results that were below the norm. In spite of management assertions to the contrary, many were convinced that management would use test results to identify whom to lay off.

Developing the Skills of the Needs Assessors

Improving the skills of the needs assessor could improve the quality of training programs. Stakeholders are demanding improvements to the needs assessment process. At its best, the needs assessment process seems to be similar to the diagnostic procedures followed by a physician. Problems (or symptoms) are assessed, underlying problems diagnosed, and training (treatment) prescribed. At its worst, the needs assessment process is analogous to the physician having the patient describe his/her symptoms, and then, without analysis and diagnosis, asking the patient what treatment he/she wants.

Companies come to Humber College to purchase needs assessment capabilities. They need help in probing for the real needs that are hidden beneath the symptoms. Employers wanted the needs assessor to be more of a diagnostician and less of an order taker.

The college has the expertise on staff to conduct a proper needs assessment. The depth and breadth of skills possessed by the college faculty and staff should allow the college to clearly identify the needs of a training client and to customize a training program to meet those needs. In most instances, however, these college resources are not being fully realized. According to the employers, trainers, and account managers in this study, the needs assessor must be skilled not only in marketing a program package, but also in identifying training needs that are sometimes hidden. On the basis of this study, it appears that the skills required by a needs assessor are:

- experience with industry and the skill to ask probing questions,

- knowledge of and skills in both training and how adults learn, and

- expertise in curriculum development and in the writing of goals and objectives.

Applying the Training to the Job

The college could work with industry stakeholders (trainees and employers) to develop and implement systems to enhance the transfer of knowledge and skills learned in training to the workplace. College stakeholders (trainers and account managers) regarded the application of skill to the job as being largely outside their role or sphere of control. This represents such an important issue for trainees and employers that more investigation needs to be done regarding application of training to the job. As a result of this study, the researcher recommends two methods of enhancing the application of knowledge and skills to the job: an employee buddy system, and the training of supervisors prior to the training of the employees reporting to them.

Buddy System for Applying New Skills to the Job

A "buddy system" could be an effective ways of transferring skills from the training program to the job. The "buddy system" is a means of giving trainees the opportunity to practice their new skills on the job under the supervision of another, more skilled, employee. This would allow the trainee to practice skills and correct errors in a manner that was perceived as non-threatening. In other words, it creates a system of formative evaluation. The supervising buddy can gain both in prestige and in personal accomplishment by being able to pass on some of his/her skills and expertise.

Employers reported in the interviews that a buddy system was effective in ensuring that new skills were applied on the job. Three of the four employers reported having used a buddy system. When questioned more closely, however, they said that there was no such formal system, but that employees sometimes teamed up on their own.

Training of Supervisors

Supervisors are a key to creating an environment that encourages trainees to apply their new skills and rewards them for doing so. The lack of opportunities to use their new skills on the job was one of the greatest frustrations reported by trainees. Application of skills on the job depends, to a large extent, on the supervisors. Some trainees reported that supervisors were comfortable with the skills themselves and were able to coach and assist the trainees in applying the skills to the job. Other trainees reported that supervisors seemed threatened by the fact that the trainees possessed skills that they did not. This resulted in an environment hostile to the practicing of the new skills.

Employers stressed the importance of having supervisors who "follow up on the training" and who "motivate trainees to use their new skills on the job". Two of the employers talked about the problem of supervisors being threatened by the new skills of the employees. Employers reported that supervisors should be technically competent in the skills learned by trainees and that supervisors with solid technical skills themselves should be willing and able to learn the new skills from the trainees. They said that such supervisors saw having technically competent employees not as a threat but as something that made their own jobs easier.

To create such an environment that is receptive to new skills, training must begin in the management levels of the company.

Creating Systems for Tracking Performance Improvements

Opportunities could exist for the college to develop and market expertise in assisting employers integrate training evaluation with other performance evaluation systems already in existence within the organization. Employers may not have the skills

required to conduct an evaluation of the training. Companies often want to measure improvements in their performance, but are not currently doing so. On the questionnaire, employers reported that their companies were using measurable criteria to assess the impact of training. However, when questioned in the interview, they said that they would like to have such evaluation systems, but currently did not. Two evaluation systems were reported to be in progress.

Employers in this study relied primarily on anecdotal assessments of the impact of training. In two of the cases studied, employers were attempting to connect the evaluation of training to other evaluation systems in the company. One employer reported that evaluation of the training program was loosely connected to the annual employee performance review. Another employer was in the process of integrating the evaluation of training with the monthly Quality Operating System report of the company.

Trainees evaluated training programs by looking for improvements in their own job performance. Trainees reported that greater skill levels resulted in increases in both personal satisfaction and status within the organization.

Changing corporate assumptions about training have resulted in modifications to the way that the impact of training is assessed. Instead of training being regarded by the company as a bonus for employees, it is now considered as a company investment that must show a return. Companies are now looking for measurable improvements and are expecting trainees to take on more responsibilities following the training. Among stakeholders, there was much talk of the need for evaluation systems, but little evidence that serious follow-up of the training had occurred.

College Credentials

The ability of the College to grant credentials is highly valued by trainees and employers. This could represent another marketing opportunity for the college. To the trainees, a college credential represented both personal accomplishment and evidence of learning and skill. The ability to give trainees credit towards a college credential is also a competitive advantage for the college over private trainers. Humber has the people, equipment, and facilities which have been established to teach a comprehensive mix of post-secondary programs. These resources can be utilized to teach training programs and give trainees credit towards college credentials giving Humber a competitive edge over private trainers.

The college must resist the temptation to lower the standards of its credentials in order to sell training programs. Humber College grants credentials which are highly regarded nationally. According to many stakeholders, the continued credibility of such certificates and diplomas depends upon the faculty of the academic divisions retaining control of the standards.

Multi-Skilling

Many of the employers in this study were trying to run their plants with a smaller workforce. This required employees to have a greater diversity of skills. Employers wanted multi-skilling for the flexibility that it gave them in scheduling production. Benefits cited were greater flexibility in scheduling production and the capability of completing the same amount of work with fewer employees. Multi-skilling can, however, be perceived by unions as a threat to job classifications.

The term "multi-skilling" seemed to have different meanings in the cases studied. In one case, multi-skilling meant teaching trainees a secondary trade--for instance, teaching electrical skills to mechanics or teaching mechanical skills to electricians so that each could function in the other trade. In another case, the term multi-skilling was used to describe the teaching of sub-specialties within a trade, for example, teaching technicians three different blow-molding processes instead of having them specialize exclusively on one. The second definition of multi-skilling is possibly less likely to be perceived as a threat by employees and unions.

More Practice Time

Trainees can learn knowledge in the classroom, but learning the skills requires practice. Extra time to practice skills must be allocated according to one employer. He reported that when employees return from training, practice time and coaching must be built into the production schedule to allow the trainees to utilize the new skills even though production might be held up and the work could probably be done faster by a more experienced employee. An account manager cautioned, however, that such practice takes time and money and companies are not always willing to pay for it. If a proper needs assessment has been done, however, the value of the cost of practice time should be much easier to sell.

RECOMMENDATIONS

This study recommends changes to the process of assessing company needs prior to the beginning of a training program. These changes include greater involvement of employees in the needs assessment, increased use of pre-tests, and the requirement that needs assessors have appropriate skills. This study further recommends the marketing of

college credentials, the investigation of the use of a "buddy system", and the integration of training evaluation into existing company systems.

Involve Employees in the Needs Assessment

This study indicates that trainees do not feel sufficiently included in the needs assessment process. There is consensus among the stakeholders in this study that employees should be involved in a more meaningful way in the needs assessment. This finding is consistent with Clarke (1984 p 20) and Tomkins and Daly (1992 p 45) who write that employees who are not involved in the planning of training may be motivated only by extrinsic motivators such as continued employment and pay raises. Interviews with trainees in this study suggest that this is the case.

The consensus of stakeholders in this study is that greater involvement of employees in the needs assessment would help to keep the goals of the program focused on the needs of the workplace by reducing the number of extraneous objectives. Training that is more focused on the necessary objectives might allow greater time for trainees to practice and master skills needed for the job.

Design Better Needs Assessment Tools

Colleges could develop methods of conducting pre-tests that are perceived as non-threatening by trainees. Targeting the training to meet the specific job needs of employees presumably requires that the designers of training have some means of assessing the pre-training skill level of the employees. Clarke (1984 p 28) cautions that pre-testing be done in a manner that is not perceived by the employees and their unions as threatening. Accordingly, he states, that remedial instruction must be provided for those

who do not pass the first test. The trainees interviewed in this study spoke of the need for pre-tests but were afraid that the results of such tests might be used against them. Opportunities for remedial or upgrading work must be provided in a supportive and productive manner.

Upgrade the Skills of Needs Assessors

Community colleges should continue to develop and improve their needs assessment capabilities. This study identifies the skills required by a needs assessor: industry knowledge, expertise in adult education and training, and expertise in curriculum development. Fortunately, the skills required for needs assessment are probably available within the faculty and staff of the colleges. Colleges will need to find ways of accessing these skills for the needs assessment process. Colleges involved with industrial training could get staff together to discuss common problems and share the cost of staff development programs.

Market College Credentials

The ability to give credit towards a college certificate or diploma represents a competitive advantage for the community colleges over private trainers. Community colleges should examine ways of integrating their industrial training activities more closely with credit programs to utilize this potential advantage.

Investigate the Use of a "Buddy System"

This study recommends that the use of a "buddy system" be investigated. The "buddy system" is a method of teaming up employees to allow a trainee to use the skills learned in training under the supervision of another employee. The college could develop programs that would aid companies in the implementation of a "buddy system". Such a program would probably involve the training of supervisors. This method could then be studied to see if it is an effective method of improving the successful integration of new skills into the workplace.

In addition to the potential benefits to the company of assisting in the integration of skills to the workplace, a "buddy system" offers potential benefits to both the supervising buddy and the buddy being supervised. To the one being supervised, a "buddy system" could offer both an opportunity to practice skills and a method of formative evaluation. The one supervising has an opportunity to pass on his/her skills to another employee. This was mentioned in the interviews by several trainees as a source of personal satisfaction.

Integrate Training Evaluation into Existing Company Systems

Companies involved in this study were searching for ways of assessing the impact of the training programs. Several had taken steps to tie the evaluation of training to existing systems designed to evaluate company performance. An opportunity could exist for the college to assist clients in developing evaluation methods compatible with those that already exist in the company.

SUGGESTIONS FOR FUTURE RESEARCH

Research opportunities evolving from this study are:

- the study of the relationship between the level of agreement on evaluation criteria by stakeholders and the effectiveness of the training program in increasing performance,

- the study of the "buddy system as an effective method of increasing the successful integration of new skills into the workplace; (Stakeholders in this study referred to a "buddy system" or mentoring program as a method of teaming up employees to allow trainees to use the skills learned in training under the supervision of another employee. Mentors should be involved in the needs assessment process) and

- the study of methods to resolve the differences between the academic culture of the college and the business culture of the Business and Industry Services (B&IS) division of the college, furthering the work of Teitel (1988).

REFLECTIONS

I am grateful to the participants who shared with me their expertise and opinions regarding industrial training. They told me of their frustrations and ideas for improvements. I hope that I have done justice to their experiences.

After I had completed the interviews, I recognized the need to include the supervisors of the trainees in this study. As the individuals who assign work to and evaluate the performance of the trainees, the supervisors are important stakeholders in industrial training programs. It would appear from this study that the supervisors are critical to the needs assessment process, the application of training to the job, and the evaluation of a training program.

Industrial training has become an important activity of Humber and other community colleges. The purpose of this study is not to be critical of the training that has been given, but rather to build on these endeavours to improve such programs in the future and improve the position of Humber College in the industrial training market.

Appendix A: Interview Questionnaire for Trainees

Assessing the Credibility of the College as a Training Agency

1. Why did your company come to Humber College Business and Industry Services (B&IS) for this training program?

reputation of the college trainers	yes	no	don't know
quality of the college facilities	yes	no	don't know
previous training programs	yes	no	don't know
some employees are Humber grads	yes	no	don't know
low price	yes	no	don't know
convenient location	yes	no	don't know
Humber was "easy to do business with"	yes	no	don't know

    other _____

2. How confident are you that Humber College Business and Industry Services (B&IS) can provide the training to the satisfaction of your employer?

    1 - very confident; 2 - confident; 3 - somewhat confident; 4 - not at all confident

3. How many training program have you previously participated in at Humber B&IS?

    1 - none; 2 - one previously; 3 - two previously; 4 - three or more previously

4. Would you return for another training program at Humber B&IS?

    1 - definitely yes; 2 - probably yes ; 3 - probably not; 4 - definitely not

5. To what extent does the Humber B&IS trainer understand your company training needs?

    1 - clearly understands ; 2 - understands mostly; 3 - understands somewhat; 4 - does not understand

Assessing the Impact of the Training

6. What will your employer measure to determine if this training has been worth the cost?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

7. What measures do you personally use to determine whether a training program has been successful?

I liked the course	yes	no	don't know
I learned new skills	yes	no	don't know
I apply what I learned on the job	yes	no	don't know
I can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

Knowledge Skills and Attitudes

8.   The following are possible outcomes of training programs. How important to the company and to the trainees are the following:

1 - very important; 2 - important; 3 little importance; 4 - makes no difference

	to company	to trainees
increased trainee self-esteem and confidence?	1 2 3 4	1 2 3 4
increased trainee morale?	1 2 3 4	1 2 3 4
trainees have more marketable skills?	1 2 3 4	1 2 3 4
having a more skilled workforce?	1 2 3 4	1 2 3 4
meeting company needs?	1 2 3 4	1 2 3 4
multi-skilling?	1 2 3 4	1 2 3 4
college credentials (diploma, etc.)?	1 2 3 4	1 2 3 4

other _____

9.   Is this training program a credit course which can lead towards a college certificate or diploma?

yes   no   don't know

10.   If not, would you be interested in a training program which is a credit course?

yes   no   don't know

Needs Assessment

11.   To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be?

1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

12. To what extent were the following groups involved in setting the training goals:

1 - greatly involved; 2 - involved; 3 - little involved; 4 - not at all

management? 1 2 3 4

employees? 1 2 3 4

licensing agencies? 1 2 3 4

others? _____ 1 2 3 4

13. Is this program designed to develop:

on-the-job skills? yes no don't know

more knowledge? yes no don't know

a change in attitudes? yes no don't know

multi-skilling? yes no don't know

14. Were you provided with a set of the training objectives for this program?

yes no

15. To what extent are the objectives clearly stated and understandable?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

16. How successful has B&IS been at translating company needs into training curriculum?

1 - very successful; 2 - successful; 3 - somewhat successful; 4 - not at all successful

Assessing the Application of Training on the Job

17.   When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace?

work assignments that use the new skills	yes	no	don't know
opportunity to team up with another employee	yes	no	don't know
supervisor or team leader coaches employees	yes	no	don't know
time is available to practice new skills	yes	no	don't know

other _____

18.   On the job, trainees will be required to apply what was learned in the training program. Some training is planned, presented and tested only at a level of knowing the material. How clearly do training objectives specify how trainees will apply their new knowledge in the workplace?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

19.   To what degree do you believe that trainees will have an opportunity to apply their new skills on the job?

1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

20.   How closely does training match on-the-job needs?

1 - very closely; 2 - closely; 3 - somewhat closely; 4 - not at all

Troubleshooting the Training

21.   Are the rewards for not performing the new skills on the job greater than the rewards for performing the new skills? Please explain.

                                           yes   no   don't know

_____

_____

_____

22.   What <u>more</u> do you need to meet the training objectives:

nothing?	yes ___	no ___
more training time?	yes ___	no ___
better instruction?	yes ___	no ___
stronger motivation?	yes ___	no ___
improved basic skills	yes ___	no ___
more practice time	yes ___	no ___

or _____

23.   Is additional instruction or practice available for those trainees who do not meet the objectives of the program?

1 - as much as required; 2 - some additional; 3 - very little; 4 - none

<u>Assessing the Value of the Training Program to Industry Stakeholders</u>

24.   Objectives are used to determine:

progress on the course?	yes	no	don't know
what has been learned?	yes	no	don't know
how new skills are used on the job?	yes	no	don't know
how new skills affect company performance?	yes	no	don't know

other _____

25.   To what extent is company equipment used for learning and testing new skills?

1 - a great deal; 2 - some use; 3 - little use; 4 - not at all

26. How will evaluation of the training program measure a <u>change in your job performance</u>?

_____

_____

_____

27. Do the objectives clearly state what <u>you</u> will be able to do when the training program is finished?

    1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

28 To what extent do the objectives state the <u>tools</u>, <u>equipment</u>, and <u>conditions</u> under which the tasks will be performed.

    1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

29. Are you performing job responsibilities <u>differently</u> now than before you started the program? How?

    1 - very differently ; 2 - differently ; 3 - somewhat differently; 4 - not at all

30. To what extent do you think it is important whether or not you acquire these new skills?

    1 - very important; 2 - important; 3 little importance; 4 - makes no difference

31. How effectively has B&IS created solutions to your company problems?

    1 - very effectively; 2 - effectively; 3 - somewhat effectively; 4 - not at all

32. Based on your experience, how valuable do you think this training program was to the <u>company</u>?

    1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

33. Based on your experience, how valuable do you think this training program was to you?

   1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

34. Tell me some of the questions that you think I should have asked.

   _____

   _____

   _____

   _____

Appendix B: Interview Questionnaire for Employers

<u>Assessing the Credibility of the College as a Training Agency</u>

1. Why did your company come to Humber College Business and Industry Services (B&IS) for this training program?

reputation of the college trainers	. yes	no	don't know
quality of the college facilities	yes	no	don't know
previous training programs	yes	no	don't know
some employees are Humber grads	yes	no	don't know
low price	yes	no	don't know
convenient location	yes	no	don't know
Humber was "easy to do business with"	yes	no	don't know

    other _____

2. How confident are you that Humber College Business and Industry Services (B&IS) can provide the training to the satisfaction of your company?

    1 - very confident; 2 - confident; 3 - somewhat confident; 4 - not at all confident

3. How many training program have you previously purchased from Humber College B&IS?

    1 - none; 2 - one previously; 3 - two previously; 4 - three or more previously

4. Would you purchase another training program from Humber College B&IS?

    1 - definitely yes; 2 - probably yes ; 3 - probably not; 4 - definitely not

5. To what extent does the Humber B&IS trainer understand your company training needs?

    1 - clearly understands ; 2 - understands mostly; 3 - understands somewhat; 4 - does not understand

Assessing the Impact of the Training

6. What will your company measure to determine if this training has been worth the cost?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	. yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

7. What measures do you personally use to determine whether a training program has been successful?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

Knowledge, Skills and Attitudes

8. The following are possible outcomes of training programs. How important to the company and to the trainees are the following:

    1 - very important; 2 - important; 3 - little importance; 4 - makes no difference

	to company	to trainees
increased employee self-esteem and confidence?	1 2 3 4	1 2 3 4
increased company morale?	1 2 3 4	1 2 3 4
marketable skills?	1 2 3 4	1 2 3 4
having a more skilled workforce?	1 2 3 4	1 2 3 4
meeting company needs?	1 2 3 4	1 2 3 4
multi-skilling?	1 2 3 4	1 2 3 4
college credentials (diploma, etc.)?	1 2 3 4	1 2 3 4

9. Is this training program a credit course which can lead towards a college certificate or diploma?

    yes   no

10. If not, would your company be interested in a training program which is a credit course?

    yes   no

Needs Assessment

11. To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be?

    1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

12. To what extent were the following groups involved in setting the training goals:

1 - greatly involved; 2 - involved; 3 - little involved; 4 - not at all

management?	1 2 3 4
employees?	1 2 3 4
licensing agencies?	1 2 3 4
others?	1 2 3 4

13. Is this program designed to develop:

on-the-job skills?	yes	no	don't know
more knowledge?	yes	no	don't know
a change in attitudes?	yes	no	don't know
multi-skilling?	yes	no	don't know

14. Were <u>trainees</u> provided with a set of the training objectives for this program?

yes   no

15. To what extent are the objectives clearly stated and understandable?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

16. How successful has B&IS been at translating company needs into training curriculum?

1 - very successful; 2 - successful; 3 - somewhat successful; 4 - not at all successful

Assessing the Application of Training on the Job

17.   When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace?

work assignments that use the new skills   yes   no   don't know

opportunity to team up with another employee   yes   no   don't know

supervisor or team leader coaches employees   yes   no   don't know

time is available to practice new skills   yes   no   don't know

other _____

18.   On the job, trainees will be required to <u>apply</u> what was learned in the training program. Some training is planned, presented and tested only at a level of <u>knowing</u> the material. How <u>clearly</u> do training objectives specify how trainees will <u>apply</u> their new knowledge in the workplace?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

19.   To what degree do you believe that trainees will have an opportunity to apply their new skills on the job?

1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

20.   How closely does training match on-the-job needs?

1 - very closely; 2 - closely; 3 - somewhat closely; 4 - not at all

Troubleshooting the Training

21.   Are the rewards for <u>not performing</u> the new skills on the job greater than the rewards for <u>performing</u> the new skills? Please explain.

yes   no   don't know

_____

_____

_____

22.   What _more_ do trainees need to meet the training objectives:

nothing?	yes ___	no ___
more training time?	yes ___	no ___
better instruction?	yes ___	no ___
stronger motivation?	yes ___	no ___
improved basic skills	yes ___	no ___
more practice time	yes ___	no ___
or _____		

23.   Is additional instruction or practice available for those trainees who do not meet the objectives of the program?

1 - as much as required; 2 - some additional; 3 - very little; 4 - none

Assessing the Value of the Training Program to Industry Stakeholders

24.   Objectives are used to determine:

progress on the course?	yes	no	don't know
what has been learned?	yes	no	don't know
how new skills are used on the job?	yes	no	don't know
how new skills affect company performance?	yes	no	don't know
other _____			

25.   To what extent is company equipment used for learning and testing new skills?

1 - a great deal; 2 - some use; 3 - little use; 4 - not at all

26. How will evaluation of the training program measure a <u>change in the job performance of trainees</u>?

_____

_____

_____

27. Do the objectives clearly state what the trainees will be able to do when the training program is finished?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

28 To what extent do the objectives state the <u>tools, equipment</u>, and <u>conditions</u> under which the tasks will be performed.

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

29. Are the trainees performing job responsibilities <u>differently</u> now than before they started the program? How?

1 - very differently ; 2 - differently ; 3 - somewhat differently; 4 - not at all

30. To what extent do you think it is important whether or not the trainees acquire these new skills?

1 - very important; 2 - important; 3 little importance; 4 - makes no difference

31. How effectively has B&IS created solutions to your company problems?

1 - very effectively; 2 - effectively; 3 - somewhat effectively; 4 - not at all

32. Based on your experience, how valuable do you think this training program was to the <u>company</u>?

1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

33.   Based on your experience, how valuable do you think this training program was
       to the trainees?

       1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

34.   Tell me some of the questions that you think I should have asked.

       _____

       _____

       _____

       _____

Appendix C: Interview Questionnaire for Trainers

<u>Assessing the Credibility of the College as a Training Agency</u>

1. Why did this company come to Humber College Business and Industry Services (B&IS) for this training program?

reputation of the college trainers	yes	no	don't know
quality of the college facilities	yes	no	don't know
previous training programs	yes	no	don't know
some employees are Humber grads	yes	no	don't know
low price	yes	no	don't know
convenient location	yes	no	don't know
Humber was easy to do business with	yes	no	don't know

    other _____

2. How confident are <u>you</u> that Humber College Business and Industry Services (B&IS) can provide the training to the satisfaction of the company?

    1 - very confident; 2 - confident; 3 - somewhat confident; 4 - not at all confident

3. How many training programs have you previously taught for Humber College B&IS?

    1 - none; 2 - one previously; 3 - two previously; 4 - three or more previously

4. Would you teach another training program for Humber College B&IS?

    1 - definitely yes; 2 - probably yes; 3 - probably not; 4 - definitely not

5. To what extent do you understand the training needs of this company?

    1 - clearly understand; 2 - understand mostly; 3 - understand somewhat; 4 - do not understand

Assessing the Impact of the Training

6. What will you measure to determine if this training has been worth the cost?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

7. What measures do you personally use to determine whether a training program has been successful?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

Knowledge, Skills and Attitudes

8. The following are possible outcomes of training programs. How important to the company and to the trainees are the following:

    1 - very important; 2 - important; 3 - little importance; 4 - makes no difference

	to company	to trainees
increased employee self-esteem and confidence?	1 2 3 4	1 2 3 4
increased company morale?	1 2 3 4	1 2 3 4
marketable skills?	1 2 3 4	1 2 3 4
having a more skilled workforce?	1 2 3 4	1 2 3 4
meeting company needs?	1 2 3 4	1 2 3 4
multi-skilling?	1 2 3 4	1 2 3 4
college credentials (diploma etc.)?	1 2 3 4	1 2 3 4

9. Is this training program a credit course which can lead towards a college certificate or diploma?

        yes   no

10. If not, would your company be interested in a training program which is a credit course?

        yes   no

Needs Assessment

11. To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be?

    1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

12. To what extent were the following groups involved in setting the training goals:

1 - greatly involved; 2 - involved; 3 - little involved; 4 - not at all

management?	1 2 3 4	
employees?	1 2 3 4	
licensing agencies?	1 2 3 4	
others?	1 2 3 4	

13. Is this program designed to develop:

on-the-job skills?	yes	no	don't know
more knowledge?	yes	no	don't know
a change in attitudes?	yes	no	don't know
multi-skilling?	yes	no	don't know

14. Were <u>trainees</u> provided with a set of the training objectives for this program?

yes   no

15. To what extent are the objectives clearly stated and understandable?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

16. How successful has B&IS been at translating company needs into training curriculum?

1 - very successful; 2 - successful; 3 - somewhat successful; 4 - not at all successful

Assessing the Application of Training on the Job

17. When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace?

work assignments that use the new skills	yes	no	don't know
opportunity to team up with another employee	yes	no	don't know
supervisor or team leader coaches employees	yes	no	don't know
time is available to practice new skills	yes	no	don't know

other _____

18. On the job, trainees will be required to **apply** what was learned in the training program. Some training is planned, presented and tested only at a level of **knowing** the material. How **clearly** do training objectives specify how trainees will **apply** their new knowledge in the workplace?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

19. To what degree do you believe that trainees will have an opportunity to apply their new skills on the job?

1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

Troubleshooting the Training

20. How closely does training match on-the-job needs?

1 - very closely; 2 - closely; 3 - somewhat closely; 4 - not at all

21. Are the rewards for **not performing** the new skills on the job greater than the rewards for **performing** the new skills? Please explain.

yes   no   don't know

_____

_____

_____

22. What <u>more</u> do trainees need to meet the training objectives:

nothing?	yes ___	no ___
more training time?	yes ___	no ___
better instruction?	yes ___	no ___
stronger motivation?	yes ___	no ___
improved basic skills	yes ___	no ___
more practice time	yes ___	no ___

or _____

23. Is additional instruction or practice available for those trainees who do not meet the objectives of the program?

1 - as much as required; 2 - some additional; 3 - very little; 4 - none

Assessing the Value of the Training Program to Stakeholders

24. Objectives are used to determine:

progress on the course?	yes	no	don't know
what has been learned?	yes	no	don't know
how new skills are used on the job?	yes	no	don't know
how new skills affect company performance?	yes	no	don't know

other _____

25. To what extent is company equipment used for learning and testing new skills?

1 - a great deal; 2 - some use; 3 - little use; 4 - not at all

26. How will evaluation of the training program measure a <u>change in the job performance of trainees</u>?

_____

_____

_____

27. Do the objectives clearly state what the trainees will be able to do when the training program is finished?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

28 To what extent do the objectives state the <u>tools, equipment,</u> and <u>conditions</u> under which the tasks will be performed.

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

29. Are the trainees performing job responsibilities <u>differently</u> now than before you taught the program? How?

1 - very differently; 2 - differently; 3 - somewhat differently; 4 - not at all

30. To what extent do you think it is important whether or not the trainees acquire these new skills?

1 - very important; 2 - important; 3 little importance; 4 - makes no difference

31. How effectively have you created solutions to company problems?

1 - very effectively; 2 - effectively; 3 - somewhat effectively; 4 - not at all

32. Based on your experience, how valuable do you think this training program was to the <u>company</u>?

1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

33. Based on your experience, how valuable do you think this training program was to <u>the trainees</u>?

   1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

34. Tell me some of the questions that you think I should have asked.

   _____

   _____

   _____

   _____

Appendix D: Interview Questionnaire for B&IS Account Managers

Assessing the Credibility of the College as a Training Agency

1. Why did this client contract Humber College Business and Industry Services (B&IS) for this training program?

reputation of the college trainers	yes	no	don't know
quality of the college facilities	yes	no	don't know
previous training programs	yes	no	don't know
some employees are Humber grads	yes	no	don't know
low price	yes	no	don't know
convenient location	yes	no	don't know
Humber was easy to do business with	yes	no	don't know

   other _____

2. How confident are you that Humber College Business and Industry Services (B&IS) can provide the training to the satisfaction of this client?

   1 - very confident; 2 - confident; 3 - somewhat confident; 4 - not at all confident

3. How many training programs has this client previously purchased from Humber College B&IS?

   1 - none; 2 - one previously; 3 - two previously; 4 - three or more previously

4. In your estimation, how likely is this client likely to return to B&IS for additional training?

   1 - very likely; 2 - likely; 3 - somewhat likely; 4 - not at all likely

5. To what extent do you understand the training needs of this company ?

   1 - clearly understand ; 2 - understand mostly; 3 - understand somewhat; 4 - do not understand

Assessing the Impact of the Training

6. What will this company measure to determine if this training has been worth the cost?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

7. What measures do you personally use to determine whether a training program has been successful?

trainees liked the course	yes	no	don't know
trainees learned new skills	yes	no	don't know
trainees apply what they learned on the job	yes	no	don't know
trainees can do the job better than before	yes	no	don't know
less down-time of equipment	yes	no	don't know
lower scrap and re-work costs	yes	no	don't know
product up to specifications	yes	no	don't know
higher productivity	yes	no	don't know
improved company profitability	yes	no	don't know

other _____

Knowledge, Skills and Attitudes

8. The following are possible outcomes of training programs. How important to the company and to the trainees are the following:

1 - very important; 2 - important; 3 - little importance; 4 - makes no difference

	to company	to trainees
increased employee self-esteem and confidence?	1 2 3 4	1 2 3 4
increased company morale?	1 2 3 4	1 2 3 4
trainees have more marketable skills?	1 2 3 4	1 2 3 4
having a more skilled workforce?	1 2 3 4	1 2 3 4
meeting company needs?	1 2 3 4	1 2 3 4
multi-skilling?	1 2 3 4	1 2 3 4
college credentials (diploma etc.)?	1 2 3 4	1 2 3 4

9. Is this training program a credit course which can lead towards a college certificate or diploma?

    yes   no

10. If not, would this company be interested in a training program which is a credit course?

    yes   no

Needs Assessment

11. To what degree did the people involved with this training program come to a clear-cut agreement on what the outcomes of the training should be?

    1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

12. To what extent were the following groups involved in setting the training goals:

1 - greatly involved; 2 - involved; 3 - little involved; 4 - not at all

management?	1 2 3 4
employees?	1 2 3 4
licensing agencies?	1 2 3 4
others?	1 2 3 4

13. Is this program designed to develop:

on-the-job skills?	yes	no	don't know
more knowledge?	yes	no	don't know
a change in attitudes?	yes	no	don't know
multi-skilling?	yes	no	don't know

14. Were <u>trainees</u> provided with a set of the training objectives for this program?

yes   no

15. To what extent are the objectives clearly stated and understandable?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

16. How successful has B&IS been at translating company needs into training curriculum?

1 - very successful; 2 - successful; 3 - somewhat successful; 4 - not at all successful

Assessing the Application of Training on the Job

17. When trainees return to the job, what is available to them in terms of feedback, support, and coaching to apply their new skills in the workplace?

work assignments that use the new skills	yes	no	don't know
opportunity to team up with another employee	yes	no	don't know
supervisor or team leader coaches employees	yes	no	don't know
time is available to practice new skills	yes	no	don't know

other _____

18. On the job, trainees will be required to apply what was learned in the training program. Some training is planned, presented and tested only at a level of knowing the material. How clearly do training objectives specify how trainees will apply their new knowledge in the workplace?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

19. To what degree do you believe that trainees will have an opportunity to apply their new skills on the job?

1 - completely; 2 - mostly; 3 - somewhat; 4 - not at all

Troubleshooting the Training

20. How closely does training match on-the-job needs?

1 - very closely; 2 - closely; 3 - somewhat closely; 4 - not at all

21. Are the rewards for not performing the new skills on the job greater than the rewards for performing the new skills? Please explain.

yes   no   don't know

_____

_____

_____

_____

22. What <u>more</u> do trainees need to meet the training objectives:

nothing?	yes ___	no ___
more training time?	yes ___	no ___
better instruction?	yes ___	no ___
stronger motivation?	yes ___	no ___
improved basic skills	yes ___	no ___
more practice time	yes ___	no ___

or _____

23. Is additional instruction or practice available for those trainees who do not meet the objectives of the program?

1 - as much as required; 2 - some additional; 3 - very little; 4 - none

<u>Assessing the Value of the Training Program to Stakeholders</u>

24. Objectives are used to determine:

progress on the course?	yes	no	don't know
what has been learned?	yes	no	don't know
how new skills are used on the job?	yes	no	don't know
how new skills affect company performance?	yes	no	don't know

other _____

25. To what extent is company equipment used for learning and testing new skills?

1 - a great deal; 2 - some use; 3 - little use; 4 - not at all

26.   How will evaluation of the training program measure a <u>change in the job performance of trainees</u>?

_____

_____

_____

27.   Do the objectives clearly state what the trainees will be able to do when the training program is finished?

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

28   To what extent do the objectives state the <u>tools, equipment</u>, and <u>conditions</u> under which the tasks will be performed.

1 - very clearly; 2 - clearly; 3 - somewhat clearly; 4 - not at all clearly

29.   Are the trainees performing job responsibilities <u>differently</u> now than before they started the program? How?

1 - very differently; 2 - differently; 3 - somewhat differently; 4 - not at all

30.   To what extent do you think it is important whether or not the trainees acquire these new skills?

1 - very important; 2 - important; 3 little importance; 4 - makes no difference

31.   How effectively has B&IS created solutions to company problems?

1 - very effectively; 2 - effectively; 3 - somewhat effectively; 4 - not at all

32.   Based on your experience, how valuable do you think this training program was to the <u>company</u>?

1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

33. Based on your experience, how valuable do you think this training program was to <u>the trainees</u>?

    1 - highly valuable; 2 - valuable; 3 - some value; 4 - no value

34. Contract training can have potential benefits for the college as a whole as well as for faculty involved in such programs. In your opinion, how important are the following potential benefits to the <u>college</u>:

    1 - very important; 2 - important; 3 - little importance; 4 - makes no difference

credibility of the college with industry?	1 2 3 4
fulfillment of college mission?	1 2 3 4
revenue generation?	1 2 3 4
placement of college graduates?	1 2 3 4
keeping program curriculum up to date?	1 2 3 4
other? _____	1 2 3 4

35. In your opinion, how important are the following potential benefits to the <u>trainer</u> involved in such programs:

    1 - very important; 2 - important; 3 - little importance; 4 - makes no difference

personal renewal?	1 2 3 4
professional development?	1 2 3 4
additional income?	1 2 3 4
other? _____	1 2 3 4

36. Tell me some of the questions that you think I should have asked.

    _____

    _____

    _____

    _____

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