DEVELOPMENT AND IMPLEMENTATION OF A PROGRAM MONITORING MODEL FOR CABOT COLLEGE OF APPLIED ARTS, TECHNOLOGY AND CONTINUING EDUCATION USING STUFFLEBEAM'S CONTEXT EVALUATION

MARY M. WADDEN

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by

Mary M Wadden, B.Sc (Hons), B. Ed.

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Abstract

The purposes of this study were (1) to develop an annual program monitoring model for Cabot College of Applied Arts, Technology and Continuing Education, (2) to determine the suitability of Stufflebeam's Context Evaluation Model as the basis of the annual program monitoring model, (3) develop a set of indicators to be used in the annual program monitoring process and (4) test the model and indicators though the trial monitoring of two programs at Cabot College.

The indicators chosen reflected the views of individuals identified as decision makers at the College. Data were collected through questionnaires, interviews and analysis of documents to define a set of indicators for program monitoring

The results indicate that Stufflebeam's Context Evaluation serves as an excellent guide for the development of an annual program monitoring process Indicators chosen have been found to be difficult to measure, but valuable information is made available when the information obtained in the monitoring process is analysed.

Recommendations are made for alternative data collection and analysis strategies in the monitoring process.

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This thesis is dedicated to the memory of my mother

Mary Margaret St Croix

(May 14, 1911 - June 15, 1995)

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Chapter I

Background of the Study

Introduction

The purpose of this study is to describe the development and application of an annual program monitoring model for a community college in Newfoundland, Canada. The intention is to provide guidelines for program monitoring that can be applied in similar settings or adapted for use in other settings.

Background for the Study

Cabot College of Applied Arts, Technology and Continuing Education is one of more than 200 community colleges in Canada. It has seven campuses, serving 4000 full-time students in over 50 different programs and 6000 part-time students in approximately 400 different courses. In common with the other community colleges in Canada, Cabot College shares the following characteristics (Cantor, 1992, p. 172-173):

1. It is a public institution, and as such is expected to respond to the needs of the regions and communities in which it is located.
2. Unlike the universities it has to be responsive to federal government requirements in so far as the latter funds it for occupational training.
3. It provides a wide range of diplomas, certificates and other credentials to students completing its courses, though it does not confer degrees.

4. Like other community colleges, it was initially concerned with school-leavers who were undertaking programs prior to work. Now it is increasingly involved in retraining and updating older workers by offering courses either on campus or in the work place.

5. Again like other Canadian colleges and their British counterparts, Cabot College takes pride in its ability, based frequently on necessity, to respond quickly to newly-identified needs whether by employers, the education service, or provincial and federal governments.

Since the mid-1980s, community colleges in Canada have experienced funding changes as a result of changes in federal government policies. Cantor (1992) describes these changes in policy on the part of the federal government. They involve "the decision to reduce greatly the direct purchase of training places to colleges and instead direct funds to the 'private and voluntary sectors', of which industry and business form the largest part" (Cantor, 1992, p.175). Concurrent with this policy has been increased involvement of provincial governments in the control of college programs and activities.

Cantor (1992) says:

> provincial ministries, anxious to get value for money, are requiring colleges to demonstrate greater productivity, efficiency and accountability and some of them, like their British counterparts, are looking for 'performance indicators', most of which would require the colleges to concentrate on economic rather than social goals. (p. 177)

In May 1992, the Provincial Department of Education sponsored a seminar entitled "A Quality System for Education" in Gander, Newfoundland. This seminar was targeted toward Chief Executive Officers and senior managers in the province's college system. Following this seminar the concept of Total Quality Management was presented to the Board of Directors of Cabot College. The Board approved funding for Total Quality Management training.

In September 1993 a Total Quality Council was established comprising the President, a Coordinator, 3 instructors, 3 support staff, and 3 administrators.

In April 1994, the Total Quality Council of Cabot College asked the President to establish a Standing Program Review Team. This was to be a nine-member team chaired by the Director of Programs and consisting of two managers and six instructors. This committee has "the overall responsibility of conducting an ongoing review of the program offerings of the College with a view to ensuring current and relevant training for an economy in rapid change" (Cabot College, May 1994).

The duties and responsibilities of the Committee involve seeking the advice and guidance of key external and internal stakeholders so as to:

(1) establish and review key criteria to be employed in reviewing current and proposed new programming;

(2) establish a methodology of applying approved criteria to develop a qualitative and quantitative assessment of programming;

(3) direct the selective application of approved methodology for all programming within the College;

(4) ensure participation of internal and external stakeholders by providing a mechanism of open communications; and

(5) recommend program renewal measures for the consideration of the President and Board. (Cabot College, May 1994)

When the Program Review Committee was formed, no overall evaluation policy existed for the College. A program review handbook had been drafted (Moores, 1993), but, due to discontinuation of funding, had not been completed Some programs were being evaluated on a regular basis as part of their accreditation requirements, some programs were choosing to carry out their own review, and some programs were not being reviewed in any in-depth manner.

During the Fall, 1994 the Program Review Committee worked to clearly establish its goals and to become familiar with the variety of different program review initiatives taking place within the college system In November 1994 a draft outline of the yearly Program Review Cycle was developed. This outline is presented in Figure 1.

The author met with the Director of Programs and Chair of the Program Review Committee in 1994. He indicated the need of a methodology of annual program monitoring to identify programs most in need of in-depth program review This corresponds to the sections of Figure 1 from M002 to M006 Each program would be monitored for a limited number of indicators, both internal and external to the programs

Reports would be produced for each program and programs most in need of a full program evaluation would be identified. These programs would then be pooled with other programs due for major review because of external accreditation. Depending on the availability of resources, programs would then be selected for a full program evaluation.

An interest was expressed in having such a system developed and tested to determine if it would fit the needs of the college. The complete program review process is beneficial, but it is costly, (Conrad and Wilson, 1985) and to adequately manage financial resources, it would be best to have some mechanism to select those programs most in need of a review.

Significance of the Study

While Cabot College has begun the development of a program review infrastructure, the Program Review Committee does not have criteria developed on which to select those programs which would benefit from an in-depth program review process.

Any proposed program monitoring model should provide a tool for effective, rational and logical determination of those programs which would benefit from an in-depth program review. Regular use of such a monitoring model should improve programs and allocate resources more efficiently for Cabot College. Such a model may also benefit other college systems, particularly those in Newfoundland and Labrador, as well as the rest of Canada.

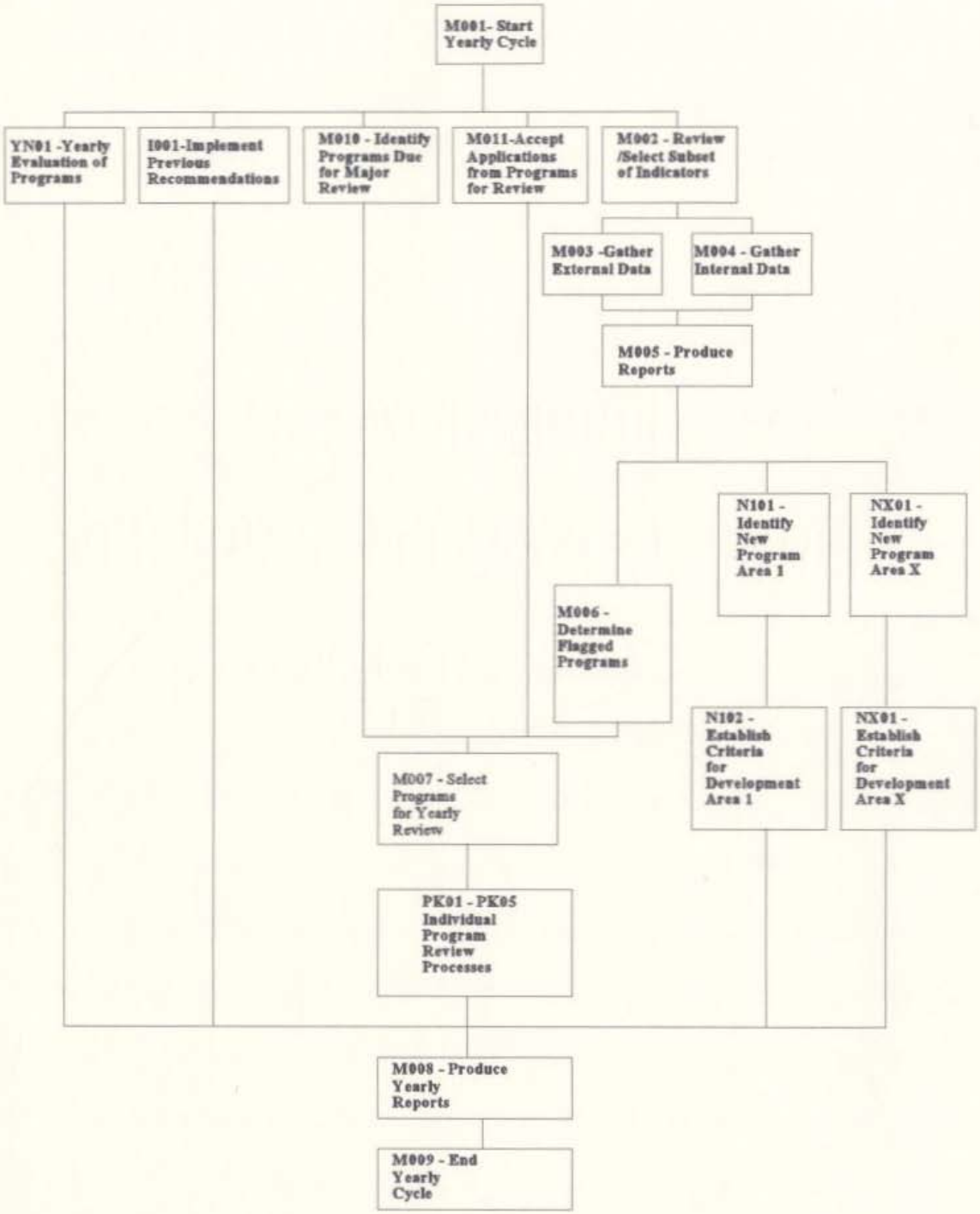

Figure 1. Annual Program Review Cycle for Cabot College of Applied Arts, Technology and Continuing Education.

Cabot College has made a commitment to Total Quality Management and this philosophy will guide the methodology chosen and indicators studied. The outcome of this study should include the production of quality indicators for educational institutions.

Limitation of the Study

While the model developed may be applicable for Cabot College, the applicability of the model to other colleges cannot be guaranteed. The ability to generalize this study will decrease as its application moves from the Cabot College setting to other colleges in the province, to other colleges in Canada and outside the country.

The program monitoring model is based on Stufflebeam et al's (1971) Context Evaluation. While it is very comprehensive and flexible (Hecht, 1975), there may be other models that may apply to the program monitoring process. It was not feasible to apply other models within the time frame of this study.

The development of the model is limited to the congruence aspect of Context Evaluation. While some contingency information may be generated, development of both aspects of the Context Evaluation is beyond the scope of the study. Stufflebeam et al (1971) point out those attempts to evaluate all aspects of a program "in the first year can only end in disaster" (p. 247).

It will be difficult to determine the reliability of the indicators chosen based on a trial of two programs. More valid indicators may also be available. There may be a need to compromise on the indicators chosen when the values of the clients are considered in the choice of indicators. The clients may choose indicators which are less valid to be more significant.

The programs chosen for application of the program monitoring model have volunteered to take part in this study. Other programs may have presented better conditions for studying the model. Finally, as this model is a decision-making model, it may be unacceptable to the college at large.

Definitions of Key Terms

The following are some of the terms and definitions that will be used throughout this study:

Program: This refers to what Braid (1987) describes as "academic programs, that is, instructional activities offered by a division or department of a college, and does not include other programs such as student services" (p. 5). Full-time programs offered at Cabot College are listed in Appendix D.

Program review: A specialized form of educational evaluation used by many colleges and universities Program review seeks to evaluate a program using criteria as to how that program should be operating. By using these criteria, faculty and administration make judgements about a program's effectiveness (Red River Community College, 1991).

Formative review: A review conducted during the operation of a program to provide program directors with evaluative information useful in improving the program (Worthen and Sanders, 1987).

Program monitoring: "On going or longitudinal program evaluation" (Buchan, 1991, p.28), in which the key issues addressed are "whether the program is reaching the appropriate target population and whether the delivery of services is consistent with program design specifications" (Rossi and Freeman, 1985, p.139).

Total Quality Management: "A comprehensive philosophy of living and working in organizations that emphasizes the relentless pursuit of continuous improvement" (Chaffee and Sherr, 1992, p. 1).

Context evaluation: Stufflebeam et al (1971) define this as a systematic and macroanalytic type of evaluation. "Specifically, it defines the relevant environment, describes the desired and actual conditions pertaining to that environment, identifies unmet

needs and unused opportunities, and diagnoses the problems that prevent needs from being met and opportunities from being used" (p. 218)

Indicators: Jaeger (1978) recommends that all variables should be termed indicators that (1) represent the aggregate status or change in status of any group of persons, objects, institutions, or elements under study, and that (2) are essential to a report of status or change of status of the entities under study or to an understanding of the conditions of the entities under study.

Organization of the Study

This thesis has five chapters. Chapter I contains the background information, significance of the study, its limitations and definition of the terms Chapter II presents a review of the literature on evaluation, Total Quality Management as it applies to higher education, program monitoring, and indicator systems. Chapter III contains the methodology including research questions, selection of indicators, the development of the monitoring framework, and implementation of program monitoring with two programs

Chapter IV presents the results of the survey for selection of indicators, the indicators chosen for monitoring and the results of monitoring two programs Chapter V summarizes the study, draws several inferences about it and makes recommendations for improvement and further research.

Chapter II

Review of the Literature

Introduction

This chapter will review the significant literature on program evaluation, Total Quality Management, program monitoring, and indicators The information will be used to select a group of indicators and establish an approach to annual program monitoring in a Total Quality Management philosophy, particularly program monitoring at Cabot College

Program Evaluation

Introduction

In his Evaluation Thesaurus, Michael Scriven (1991b) describes evaluation "as a key analytical process in all disciplined intellectual and practical endeavours" (p. 1).

He further emphasizes the role of evaluation by comparing evaluation with science. Both produce knowledge about the relevant worth of something, whether it is about different teaching methods in education or different catalysts in chemistry. Evaluation is not restricted to only applied knowledge. It is fundamental to pure science. "Evaluation of the quality of evidence, research designs. instruments, interpretations, and so on -- evaluation *within* science" (p. 5), is how science is differentiated from pseudoscience.

Within the general discipline of evaluation, there are at least six major types of evaluations. Scriven (1994) lists these as "program evaluation, personnel evaluation, performance evaluation, product evaluation, proposal evaluation, and policy evaluation" (p. 148).

He also refers to two other types The first is meta-evaluation, "the evaluation of evaluations" (p. 148). The second is "discipline-specific evaluation, the kind of evaluation that goes on inside a discipline, sometimes with or without the assistance of trained evaluators, but always requiring substantial knowledge of the discipline" (p 148).

Of these major types of evaluation, Scriven (1991b) states that most of the "study of investigative or practical procedures aimed at improving practice -- and the methods resulting from that study" (p. 11), has occurred in program evaluation

Some authors (Madaus, Scriven and Stufflebeam, 1983) suggest that evaluation may be traced to the early 1800s while other authors trace evaluation to the ancient "flint chippers and bone carvers" (Scriven, 1994, p. 152). Certain contributions to the field of evaluation, however, are acknowledged by many authors (McLaughlin and Phillips, 1991, Worthen and Sanders, 1987; Shapiro, 1986; Stufflebeam and Shinkfield, 1985) These include Horace Mann's reports to the Board of Education of the Commonwealth of Massachusetts in the mid-1980s, and in the early 1900s, Joseph Rice's study of spelling and arithmetic throughout the U.S.A. Other contributions included the work of Binet on intelligence and Thorndike's research on generalized intellectual power

Jonathan Shapiro (1986) argues that formal program evaluation did not begin until the 1960s. He outlined two reasons for this The first was the political, economic, and social climate at the time focused on restructuring "the society to overcome the injustices and instabilities associated with the historic problems of poverty and race" (p. 164). The second reason was the advance in technology, particularly computers so that "large-scale, complex investigations became possible to a degree that had not previously existed" (p. 164)

Program Evaluation and Evaluation Models

Craven (1980) defines program evaluation as "the process of specifying, defining, collecting, analysing, and interpreting information about designated aspects of a given program, and using that information to arrive at value judgements among decision alternatives regarding the installation, continuation, modification, or termination of a program" (p. 434).

Tyler (1991) describes six purposes for program evaluation:

> (1) to monitor present programs; (2) to select a better available program to replace one now in use that is deemed relatively ineffective; (3) to assist in developing a new program; (4) to identify the differential effects of the program with different populations of students or other clients; (5) to provide estimates of effects in the catalogue of programs listed in consumer

resource centers; (6) to test the relevance and validity of the principles upon which the program is based. (p. 4)

	Objectives Oriented	Management Oriented	Consumer Oriented	Expertise Oriented	Adversary Oriented	Naturalistic & Participant Oriented
Some Proponents	Tyler Provus Popham Taba Bloom.	Stufflebeam Alkin Provus	Scriven Komoski	Eisner Accreditation Groups	Wolf Owens Levine Kourilsky	Stake Paton Guba and Lincoln Rippey MacDonald Parlett and Hamilton
Purpose of Evaluation	Determining the extent to which objectives are achieved	Providing useful information to aid in making decisions	Providing information about educational products to aid decisions about purchases or adoptions	Providing professional judgments of quality	Providing a balanced examination of all sides of controversial issues or highlighting both strengths and weaknesses of a program	Understanding and portraying the complexities of an educational activity, responding to an audience's requirements for information

Figure 2. Comparison of the Six Categories of Evaluation (Worthen and Sanders, 1987)

In describing alternative approaches to educational evaluation Popham (1993) states "there is more than one way to conduct a defensible educational evaluation . . there are different evaluation strategies for different educational situations" (p. 22).

Worthen and Sanders (1987) classify evaluation under six categories. These categories, their purpose and proponents are described in Figure 2. The selection of

categories can be viewed in terms of the "underlying theoretical assumptions on which the models are based" (House, 1978, p. 45).

Greene (1994) outlines four major philosophical frameworks in which she feels program evaluations can fit. She bases this on the type of evaluation questions answered by a model. Figure 3 shows how specific evaluation categories fit her four philosophical frameworks. These different frameworks reflect the historical development of evaluation.

Philosophical Framework	Evaluation Categories	Preferred Methods	Typical Evaluation Questions
Postpositivism	Objectives Oriented	Quantitative: experiments and quasiexperiments, systems analysis, causal modelling, cost-benefit analysis.	Are desired outcomes attained and attributable to the program? Is this program the most efficient alternative?
Pragmatism	Management Oriented; Consumer Oriented; Expertise Oriented	Eclectic, mixed: structured and unstructured surveys, questionnaires, interviews, observations.	Which parts of the program work well and which need improvement? How effective is the program with respect to the organization's goals? With respect to beneficiaries' needs?
Interpretivism	Responsive Oriented Connoisseur-ship	Qualitative: case studies, interview, observations, document review.	How is the program experienced by various stakeholders?
Critical, Normative Science	Fourth Generation Evaluation	Participatory: stakeholder participation in varied structured and unstructured, quantitative and qualitative designs and methods: historical analysis, social criticism.	In what ways are the premises, goals, or activities of the program serving to maintain power and resource inequities in the society?

Figure 3. Major Approaches and Models of Program Evaluations (Greene, 1994).

Tyler and Objectives Evaluation

In their overview of Tyler's works, Madaus and Stufflebeam (1989) outline what Tyler saw as the requirements of a sound evaluation. These were:

> (1) working from unambiguous definitions of student behaviours that specify what a student who has attained the objective can do or produce, (2) specifying the situations where, or ways in which, students can demonstrate the behaviours of interest, (3) determining appropriate standards; (4) using multiple approaches to measurement; (5) assessing all types of behaviours that are significant in educational development of students; (6) keeping records of student progress; and (7) developing scales and scoring schemes that convey useful information. (p 5)

Tyler's writings on the subject dominated thinking on evaluation from the mid 1940s to the 1960s. Following the launch of the Russian Sputnik I in 1957, the U S. federal government poured money into the development of new educational programs in science, mathematics and foreign language. As Madaus et al (1983) point out, despite the "best and brightest of the educational evaluation community [being involved, their work was] neither particularly helpful to curriculum developers nor responsive to the questions being raised by those who wanted to know about the programs' effectiveness" (p. 12)

In 1965, the U.S. government passed the Elementary and Secondary Schools Act that mandated the evaluation of Title I and Title III programs (Ingle, 1984). The response

to this demand was the promotion of the field research designs of Campbell and Stanley (1966)

The reasons for the immediate acceptance of this evaluation approach are outlined by Shapiro (1986). The first reason was Campbell's suggestion that reforms in social policies and programs should be viewed as experiments and as such "it would be most appropriate to employ experimental or quasi-experimental research designs to evaluate such programs and policies" (p. 12). A second reason for this approach was that "the powerful principle of factorial design could be used to structure the components of a program systematically in order to see which are effective and in what combination" (Shapiro, 1986 p. 166). Shapiro (1986) points out the most important reason for the adoption of this approach was that many evaluators working in the field at the time had backgrounds in education and educational psychology. This approach "may have been the most familiar and comfortable methodology to employ in the conduct of evaluation research" (p. 166).

While greeted with initial optimism and high expectations, by the late 1960s this approach to evaluation was obviously failing. The four dimensions along which it was criticized were "the scope or focus of experiments, the *a priori* specification of goals and outcome variables by the evaluator, the preeminent status accorded internal validity in the Campbell and Stanley scheme, and the exclusive reliance on quantitative data" (Shapiro, 1986, p. 167).

While agreeing that the experimental or quasi-experimental design has severe limitations, Worthen and Sanders (1987) do see a role for this approach, especially in comparative studies where "two or more programs, products, or methods are compared on common criteria" (p 317). They point out, however, that this circumstance is unusual in education today.

Scriven and Goal - Free Evaluation

In 1967 Michael Scriven, wrote The Methodology of Evaluation In reviewing his contribution to evaluation Scriven (1991a) describes two major ideas he presented in that paper. The first was that evaluation had two distinctive roles. One role is a *formative* role where the evaluation "is designed, done and intended to support the process of improvement, and normally commissioned or done by, and delivered to, someone who can make improvements" (p. 20). The other role is *summative* and it is "evaluation done for, or by, any observers or decision makers (by contrast with developers) who need evaluative conclusions for any other reasons other than development" (p. 20).

Scriven's second major contribution involved the recognition of the importance of assessing not only the goals of evaluation but also the merit of the goals Popham (1993) has pointed out that this "has alerted evaluators to the impropriety of passively accepting any goals proffered by program designers" (p. 28).

Inherent in a goal-free evaluation is the need to obtain information on actual effects and on needs. "If a product has an effect that could be shown to be responsive to a

need, that product was useful and should be positively evaluated" (Guba and Lincoln, 1981, p. 17). A key point in his evaluation checklist involves describing "the needs and values of those that are impacted or may be impacted" (Stufflebeam and Shinkfield, 1985, p. 318).

In describing the advantages of this approach to evaluation Stufflebeam and Shinkfield (1985) find it to be " less intrusive than goal-based evaluation; more adaptable to midstream goal shifts; better at finding side effects; less prone to social, perceptual and cognitive bias; more professionally challenging; and more equitable in taking a wide range of values into account" (p. 317).

Several drawbacks to such an evaluation approach are described by Guba and Lincoln (1981). The first was that the model did not attempt to suggest how to identify effects. Secondly, it did not describe what needs should be assessed. Finally, it did not tackle how standards of judgements would be arrived at. They feel that Scriven overstated the case for goal-free evaluation. "Scriven's own admission that goal-free evaluation is best used as an auxiliary, parallel activity (to goal-based evaluations) is evidence for this" (p. 18).

Stake and the Responsive Model

The other major evaluation contributor in 1967 was Robert Stake. To describe what evaluations should look like, he wrote a paper titled The Countenance of Educational Evaluation In this paper he introduced the idea that the process of evaluation

should not be standardized. He presented a 3 x 4 matrix to classify data that should be collected. Different evaluations would require different combinations of data. McLaughlin and Phillips (1991) observe that at this time "evaluators were hungry for guidance, many grasped his ideas as a prescription -- as a 'countenance model'" (p. 65). In discussing his countenance paper Stake (1991) expressed displeasure about how the paper was adopted by evaluators as a model. He saw it as an "overview of data available for an evaluation study" (p. 72).

Stake (1991) notes that the "major weakness of the countenance paper was the shortage of procedural guidelines to match the epistemological and political sweep of its data matrices" (pp. 77-78). While on sabbatical in Sweden in 1973, Stake proposed his Responsive Evaluation Model (Stake, 1973). This approach was in contrast to the preordinate approaches. He describes it as " an approach that sacrifices some precision in measurement, hopefully to increase the usefulness of the findings to persons in and around the program" (p. 292). It did not emphasize objectives and standards but relies more "on natural communication" (p. 292).

Stake (1973) identifies twelve events in evaluation. These are illustrated in Figure 4. The events do not have to occur in the order of the figure. "Any event can follow any event. Furthermore, many events occur simultaneously, and the evaluator returns to each event often before the evaluation ends" (Stake, 1973, p. 297).

He saw a use for responsive evaluation in formative evaluation "when the staff needs help in monitoring the program, when no one is sure what problems will arise" (p

303) He also saw a use for it in summative evaluation "when audiences want an understanding of a program's activities, its strengths and shortcomings, and when the evaluator feels that it is his responsibility to provide vicarious experience" (p. 303).

Twelve Events in a Responsive Evaluation
Talk with clients, program staff, and audiences
Identify program scope
Overview program activities
Discover purposes, concerns
Conceptualize issues, problems
Identify data needs, re issues
Select observers, judges, instruments, if any
Observe designated antecedents, transactions, and outcomes
Thematize, prepare portrayals, case studies
Validate, confirm, attempt to disconfirm
Winnow format for audience use
Assemble formal reports, if any

Figure 4 Recurring Events in Stake's Responsive Model (Stake, 1973).

In his 1991 paper Stake refers to a common misconception about his model. This is that a responsive evaluation requires naturalistic study. He states that "management of the study remains flexible whether quantitative or qualitative data subsequently dominate" (p. 78). He further states that "although most who have chosen to call their evaluating responsive have had leanings toward naturalistic case study, the essence of responsiveness is adaption to prevailing conditions. Relativism before naturalism" (p. 79).

Worthen and Sanders (1987) and Madaus, Scriven and Stufflebeam (1983) describe the advantages of such an approach. First, the model stresses the broad scope of the program. Secondly, the use of multiple data-collection techniques provide a holistic view of complex human and organizational behaviour. They also describe the disadvantages. There is a possible over reliance on subjective perceptions and failure to provide ways for making overall judgements about a program. Worthen and Sanders (1987) also list other possible disadvantages as cost, length of time required for the evaluation, and the labour intensity involved.

Alkin and the UCLA Approach

In 1969 Marvin Alkin published a paper called "Evaluation Theory Development" In his 1991 reflection on this original paper, Alkin lists the four assumptions he made about evaluation:

1. Evaluation is a process of gathering information.
2. The information collected in an evaluation will be used mainly to decide alternate courses of action.
3. Evaluation information should be presented to the decision maker in a form that he can use effectively which is designed to help rather than confuse or mislead him.
4. Different kinds of decisions require different kinds of evaluation procedures (p. 94)

Alkin identified several evaluation need areas. Worthen and Sanders (1987) list these five areas:

1. *Systems assessment*, to provide information about the state of the system.
2. *Program planning*, to assist in the selection of particular programs likely to be effective in meeting specific educational needs.
3. *Program implementation*, to provide information about whether a program was introduced to the appropriate group in the manner intended.
4. *Program improvement*, to provide information about how a program is functioning, whether interim objectives are being achieved, and whether unanticipated outcomes are appearing.
5. *Program certification*, to provide information about the value of the program and its potential for use elsewhere. (p. 81)

While many texts (Worthen and Sanders, 1987; Madaus et al, 1983; Stufflebeam and Shinkfield, 1985) classify Alkin's approach as a decision-making approach, Alkin (1991) feels he belongs with the user-oriented approach which involves determining what information is needed by various people and arranging for the information to be collected and providing it to the various people. Scriven (1994) classifies Alkin's approach as a weak decision approach because this approach defines "evaluation as factual data

gathering in the service of a decision-maker *who is to draw all evaluative conclusions*" (p. 157).

Stufflebeam and the CIPP Approach

Popham (1993) refers to the CIPP Model as best known of the decision-facilitation evaluation schemes. CIPP is an acronym for Context, Input, Process, and Product, four types of evaluation presented by Stufflebeam et al (1971) in the text Educational Evaluation and Decision Making. In his Evaluation Thesaurus, Michael Scriven (1991b) describes the CIPP model as "probably the first sophisticated model for program evaluation, and possibly still the most elaborate and carefully thought-out model extant" (p. 40). This model emphasizes systematic procedures for program evaluation in support of decision making.

In their book Stufflebeam and his colleagues (1971) offer the following definition of evaluation: "Educational evaluation is the (process) of (delineating), (obtaining), and (providing) (useful) (information) for (judging) (decision alternatives)" (p 40) Stufflebeam et al (1971) classified four types of decisions These were planning, structuring, implementing and recycling decisions.

Planning decisions arise when there are major changes needed in a program A need for such a decision arises from awareness of differences in the intended and actual program or in differences in what the program could become and what it is likely to become. The awareness of a need for a planning decision ideally arises from "an evaluation

system that would systematically monitor the institution's operations for both congruence and contingency" (p 52) Congruence monitors actual system performance "to identify disturbances or discrepancies" (p. 52). Contingency involves looking "outside the system for opportunities to use at some later time" (p. 52). Planning decisions are serviced by Context Evaluations.

Structuring decisions specify "the means to achieve the ends which have been established as a result of planning decisions" (p. 354). Implementing decisions involve "many choices regarding changes of procedures in process" (p. 83). They result from carrying through the action plan determined by the structuring decisions. Recycling decisions most appropriately occur throughout an activity and are concerned "with attainments at any point in a program" (p. 83). These result in choices "to continue, terminate, evolve, or drastically modify an activity devoted to the solution of a system problem" (p. 354). Structuring, implementing and recycling decisions are serviced respectively by Input, Process and Product Evaluations.

Context Evaluation, like Product Evaluation, assesses "the extent to which ends are being attained. Context evaluation does this systematically with respect to a total system, and product evaluation does so with respect to change efforts in the system" (p. 232 - 233). The criteria for judging the usefulness of a product are determined by specifications provided in the Context Evaluation.

Input Evaluation occurs before starting a change project, while Product Evaluation occurs during and after a change project. Process Evaluation centres on determining if the actual procedure for the change project is discrepant from its original design.

Over the next number of years, Stufflebeam refined his model. Originally developed as a proactive approach, the model can also serve a retroactive approach and therefore provide information for accountability (Stufflebeam, 1971). Reflecting an effect from the Countenance paper (Stake, 1967), Stufflebeam (1983) incorporated a search for side effects and intended effects into the Product Evaluation. The formative aspect of the CIPP Model was seen when it was used in a proactive manner while the summative aspect of the CIPP Model was seen when it was used as an accountability or retroactive mode

To aid evaluators in determining what type of evaluation is most appropriate, Stufflebeam (1985) listed several indicators to use to determine points of entry. Finally, in Stufflebeam and Shinkfield (1985), the importance of metaevaluation, or the evaluation of the evaluation is stressed. This metaevaluation should involve application of the "Standards for Evaluations of Educational Programs" (Joint Committee, 1981) as criteria for judgement of the worth of the evaluation. The project, from which these standards were developed, was headed by Daniel Stufflebeam

Wolf and the Judicial Evaluation Model

Owens (1973) lists a number of limitations to the models of evaluation being used to that time. These include neglecting "variables influencing the program such as personal

relationships (e.g., student-teacher, teacher-administration), student attitudes, and community acceptance" (p. 267). To rectify this, Owens (1973) suggests that adversarial proceedings would be appropriate for educational decision making and describes ways for using the adversary approach.

One form of the adversary approach was suggested by Robert Wolf. "This method provides a means for all parties (parents, children, school personnel at all levels, taxpayers, and community groups) to participate meaningfully throughout all phases of the evaluation process and in a variety of capacities" (Wolf, 1979, p. 191).

The model consists of four well defined stages. The first is the exploratory phase involving issue generation. During this stage, a pool of issues emerges "out of interviews, direct observations and source documents" (Wolf, 1979, p. 194). Secondly, the number of issues are reduced using the audience information needs to guide selection. The third stage involves preparation of the evidence by both sides. Finally, a clarification forum is held. At this forum, a panel hears the evidence. "Case presenters make their cases through witnesses selected to represent their views relative to a given issue. Direct, cross, re-direct, and re-cross examination of all witnesses are engaged in; and, as in a court of law, opening and closing arguments are presented" (p. 194). Based on this, the panel makes its judgements.

Popham and Carlson (1977) outline several serious potential deficits in the adversary approach. The first is that it can be very difficult to have two competing teams

or individuals who have equal adversarial skills Very serious consequences can arise if the skills of the individual determines the decision, rather than the worth of the argument

A second problem arises from the choice of the arbiters. A poor arbiter can make poor judgements on the adequacy of evidence. The next problem is an overestimation of the power and efficacy of the process. Further problems arise in framing the evaluation in a manner suitable for the approach, the possibility of misuse by biased decision makers, and excessive costs.

While having many potential problems, the judicial method did "stimulate the development of a new methodology called *naturalistic inquiry*" (Wolf, 1979, p. 192)

Eisner and Educational Connoisseurship

Elliot Eisner (1976) proposed an educational connoisseurship similar to that of art. His "educational connoisseur has a broad background of experience in his or her field of expertise, and also has a depth of theoretical understanding and educated taste The judgement of connoisseurs can be relied upon, and can be a guide to others about what factors ought to be attended in particular situations" (McLaughlin and Phillips, 1991, p 168).

The approach has three aspects. The first is describing the qualities that are encountered without getting into what they signify. The second aspect is interpreting "the meaning and significance that various forms of action have for those in a social setting" (Eisner, 1976, p. 143). The final aspect is determining the educational value of what is

happening. This is what requires an individual with "a background sufficiently rich in educational theory, educational philosophy, and educational history" (Eisner, 1976, p. 143).

The use of this model has been very limited. Popham (1993) recognizes that Eisner and some of his students are very good at this form of evaluation. However, for other evaluators "few operational guidelines have been provided" (p. 43).

Smith (1984) criticises this approach by looking at the qualifications needed to be an educational connoisseur: the skills of literary criticism, knowledge of the social sciences, and knowledge of the history and philosophy of education. Smith feels few would meet these qualifications. The second criticism Smith levels is the inability of the same methodology to be used for "evaluations of classroom life, textbooks and school furniture" (p. 14).

Accreditation

Another expertise-oriented approach to evaluation is the one Worthen and Sanders (1987) say is "the most familiar professional review system" (p. 100). The distinctive features of accreditation include a handbook of standards, a self-study report by the institution, visits by an external group of experts to the site, and a report generated. This report is reviewed by a panel and a final report generated.

Scriven (1983) says that "within this general framework, good evaluation could indeed be done. But it is rare to see it done" (p. 250). Worthen and Sanders (1987) also

feel "there may be much room for improvement in the accreditation process" (p. 102) Popham (1993) describes the limitation to most accreditation studies as being the emphasis on input criteria: "the number and quality of books in the school library, the degree of training of the school's faculty and the physical plant" (p. 27). While recognizing that input criteria should not be eliminated from evaluation, "evaluation models that are dominated with a concern for inputs are not often recommended with fervour these days" (p. 27).

Guba and Lincoln - The Constructivist Approach

In 1982 Guba and Lincoln wrote a paper promoting the use of naturalistic inquiry in educational evaluations. They listed five axioms which differentiated rationalistic inquiry from naturalistic inquiry. These are:

1. The nature of reality. Rationalistic inquiry views reality as a single entity consisting of readily identifiable variables capable of being studied. The naturalistic view is there are multiple realities which can only be studied holistically

2. The inquirer-objective relationship. The rationalistic view of an independent unbiased observer is very different from the naturalistic view of an interacting relationship between object and observer.

3. The nature of truth statements. Rationalistic inquiry aims at generalizations that are context-free. Naturalistic inquiry aims at hypotheses about individual cases

4. Attribution/explanation of action. Each action is explainable by previous cause in rationalistic inquiry while in naturalistic inquiry, actions are considered to be the result of multiple interwoven factors, events and processes.

5. The role of values in inquiry. Rationalistic inquiry is considered to be value-free because of the scientific methodology used. Naturalistic inquiry recognizes that evaluation is constrained by values with respect to at least five components. These are the values of the inquirer, the choice of paradigm guiding the investigation, the theory chosen to gather and analyse the results, the values inherent in the context, and finally, the agreement between the four above-mentioned components or the discrepancy between them.

To replace the rationalistic concepts of internal validity, external validity, reliability and objectivity, Guba and Lincoln (1982) propose four parallel terms. These were credibility, transferability, dependability and confirmability.

To test for credibility, they suggest prolonged engagement at a site, persistent observation, peer debriefing, triangulation, referential adequacy materials and member checks. To allow transferability, they suggest theoretical/purposive sampling and thick description. For dependability, they recommend use of overlap methods, stepwise replication and the dependability audit. Finally, to produce confirmability they advise triangulation, practising reflexivity and the confirmability audit.

In their book Fourth Generation Evaluation Guba and Lincoln (1989) argue the case for a new generation of evaluation "in which the claims, concerns, and issues of

stakeholders serve as organizational foci (the basis for determining what information is needed)" (p. 50). The guiding format for the evaluation is the constructivist paradigm and involves "eliciting from each stakeholder group their constructions about the evaluand" (p. 72).

Lai (1991) found several practical problems in trying to implement this type of evaluation. The first is that many federally funded evaluations require a measure of educational progress of participants versus a nonproject comparison group. The second problem involves time restrictions with the decision-makers. Insufficient time is available for evaluators to work through a negotiation process. "Simple, brief and definitive evaluations were what would get listened to" (Lai, 1991, p 4). Another problem results from stakeholders who "strongly expressed a desire for specific things such as a set of (evaluation) conclusions and a set of (definite) recommendations" (Lai, 1991, p. 3).

On the positive side Lai (1991) says "we found it professionally satisfying to assert that our goal was to enhance negotiations rather than to act as if we were omniscient providers of recommendations. It also seemed that in the fourth generation arena, qualitative methods and case studies now had appropriately a much improved status in the evaluation business" (p. 5).

Qualitative versus Quantitative Evaluations

Denzin and Lincoln (1994) say that qualitative research involves "an emphasis on processes and meanings that are not rigorously examined, or measured (if measured at all),

in terms of quantity, amount, intensity, or frequency [whereas] quantitative studies emphasize the measurement and analysis of causal relationships between variables not processes" (p. 4). Figure 5 illustrates the different research strategies and methods of collection and analysis for these two types of research

The Connoirship Model of Eisner, and the Fourth Generation Model of Guba and Lincoln are qualitative evaluation procedures. These two models are representative of two of "the currently important paradigms and approaches in qualitative evaluation" (Pitman and Maxwell, 1992, p. 733).

Janesick (1994) points out that "the use of qualitative techniques does not necessarily mean that the research being conducted is qualitative. What makes research qualitative is a matter of "substantive focus and intent" (p.213).

Worthen and Sanders (1987) refer to the "struggle to sort out the relative utility of these two distinct approaches" (p. 50). Shapiro (1986) refers to the "common thread running through the writings of Stake, Provus, and Stufflebeam is that quantitative evaluation data are at least not adequate - if not, in fact, inappropriate -- for the comprehensive evaluation of educational programs" (p. 169-170). In describing their position on the debate of qualitative versus quantitative, Worthen and Sanders (1987) state: "We view both forms of inquiry as appropriate, depending on the purpose and questions for which the study is conducted" (p. 52).

Research Type	Qualitative (Denzin and Lincoln, 1994, p. 12)	Quantitative (Popham, 1993, Chapter 4)
Research Strategies	Case study, ethnography, phenomenology grounded theory, biographical method, historical method, action and applied research, clinical research.	Standardized measures, surveys, tests, experimental and quasi-experimental methods
Methods of Collection and Analysis	Interviewing, observing, artifacts, documents, records, visual methods, personal experience methods, data management techniques computer-assisted analysis textual analysis.	Paper and pencil tests, ratings, criterion referenced tests, comparison and statistical aggregation of data

Figure 5. Comparison of Research Strategies and Methods of Data Collection and Analysis for Qualitative and Quantitative Research

Total Quality Management

Defining Quality

In defining quality, Murgatroyd and Morgan (1992) refer to three kinds. First is quality assurance which "refers to the determination of standards, appropriate methods and quality requirements by an expert body" (p. 45). It involves inspection or evaluation to determine if practice meets standards. Educational examples are provincial public

examinations in high schools and national exams for Nursing Assistants and Medical Laboratory Assistants.

Murgatroyd and Morgan's (1992) second kind of quality is "contract conformance, where some quality standard has been specified during the negotiation of a contract" (p. 45). The determination of quality in this type is made by the person doing the work, not a panel of experts. Guidelines indicating what work has to be done in a course is an example of this type of quality.

The third definition views quality as being customer-driven. It refers to the concept of customers making their expectations known and the providers "meeting or exceeding the expectations of the customers" (Murgatroyd and Morgan, 1992, p. 46).

There are a number of characteristics to customer-driven quality. When helped and encouraged, customers can define their expectations clearly. These can differ from those assumed by the service provider. Performance can be improved if providers and customers work collaboratively. Although not all customers have the same expectations "initiatives that satisfy the needs of significant numbers of stakeholders can be taken" (Murgatroyd and Morgan, 1992, p. 50). In the past the balance rested heavily on the quality assurance, less on contract conformance, and the least emphasis was on customer-driven quality.

Chaffee and Sherr (1992) describe design, output and process as three components of quality. Both output and process are affected by quality in design. Quality output involves getting the desired results.

> Quality in design relates to both the output (for example, an academic program that meets students' needs) and the process (for example, how a curriculum, faculty, equipment, scheduling, and other factors combine to effect the program). . . . A quality process means that all the steps within the organization functioning from beginning to end work effectively toward the desired goals with each step adding value. (Chaffee and Sherr, 1992, p 1)

The three definitions of Murgatroyd and Morgan (1992) are reflected in the components of quality. When the emphasis is on quality assurance "considerable attention is directed to quality output (outcomes assessment) and quality in design (curriculum design, transfer of credit)" (Chaffee and Sherr, 1992, p. 2). Quality process tends to be ignored However the quality viewpoint is that: "we cannot inspect quality into a product or service at the end of the line. Once a product is made or a service is rendered, the only way to improve it is to do it over" (p. 2).

Inputs can be assured by contract conformance. Chaffee and Sherr (1992) describe them as a "favourite proxy for quality in higher education. [They point out that] proper inputs maximize the system, while improper inputs limit the system" (p. 2). Inputs are not part of the definition of quality but are referred to as "proper or appropriate" (p. 2).

Total Quality Management

Conrad and Blackburn (1985) feel three factors have resulted in an interest in quality. These are disenchantment with educational institutions, calls for accountability and reduced resources These factors have caused "colleges and universities across the country to eye total quality management as a possible remedy for their ills" (Wolverton, 1993, p. 1).

Sherr and Lozier (1991) describe Total Quality Management as "not a passive term but an energetic activity - that of continuous process improvement" (p. 6). According to Gonzales, (1989) Total Quality Management contains tenets from what many recognize as Japanese management. Prior to World War II, Japanese products were not widely regarded on the American market. When the Japanese people had to rebuild their economy after the war, they invited American industrial experts to Japan. Among them were W. Edward Deming, Joseph Juran and Phillip B. Crosby, Sr. Their contribution is "recognized internationally for enabling Japanese industrial systems to achieve their current worldwide reputation for quality " (Sherr and Lozier, 1991, p.7).

Five points underlie the theoretical system of Total Quality Management. The first is mission and customer focus. It is important for an organization to know its mission and its customers because this "makes it feasible to measure performance against stated purposes" (Sherr and Lozier, 1991, p. 8).

The second area is a systematic approach to operations. The "plan-do-check-act (PDCA) offers a scientific method for continuous improvement" (p. 8). This involves

developing a plan for a process in need of improvement, carry out the plan, check to see if the plan works by collecting data, and act on the results by further implementation if successful or discarding if not successful.

A third point involves the vigorous development of human resources This involves empowerment of "employees closest to the impact of a decision" (p 10) A fourth area is long-term thinking which "requires a willingness to forgo short-term benefits that undermine future well-being" (p. 10). The final point is the requirement that everyone be committed to improving the quality of the organization. Sherr and Lozier (1991) see Total Quality Management espousing the value of three things the importance of people, the need to use knowledge, and continuous improvement.

Total Quality Management and Education

Wolverton (1993) describes the two different perspectives of Total Quality Management (TQM) in education. TQM can be viewed as a management system Well trained teams are "schooled in the effective use of analytical tools such as flow, Paeto and fish bone charts, affinity diagrams, scatter plots and histograms. These teams monitor and control college and university processes in an effort to improve quality" (p. 1).

TQM as a philosophy involves pushing "TQM to the heart of the organization--its culture. . . . It propagates a "quality service for all" attitude, which values coworkers, students, supervisors, employees and the community external to the college" (p 1-2).

A large number of American and Canadian post-secondary institutions are using TQM. Sometimes the initiative is unit-wide as in the case of the University of Kansas which reduced time spent to generate a student work-study check by almost 80 percent. (Wolverton, 1993)

Other initiatives have been institution-wide. Fox Valley Technical College began offering courses in TQM in 1985 at the request of local businesses. Through the use of the TQM practices of a quality improvement council and special problem solving teams, the College reduced its budget by 3% ($1.2 million) without personnel or program cuts.

Murgatroyd and Morgan (1992) state that one of the key components of TQM is "the systematic recording of what is happening and the use of these records to feed-back information about what is happening to the members [of the team]" (p. 76). This recording focuses on "agreed upon indicators of performance in relation to goals set [writing up successful processes, and] fine tuning the improvements" (p. 76).

Cuttance (1994) in surveying the literature on quality found that a fully integrated strategy to quality assurance and quality management for school systems involved "a system for benchmarking the performance of various processes and functions throughout the system" (p.109).

Total Quality Management and Program Evaluation

"Both accountability and quality assurance require a process of educational review" (Cuttance, 1994, p. 109). Seymour (1993) points out that higher education has

relied "*too heavily on occasional, externally-derived devices to convey the appearance of quality*" (p. 81). He points out that cyclical review, every five years or so results in a flurry of activity followed by a return to complacency.

Conrad and Wilson (1985) describe a similar criticism of evaluation in higher education. "The perception is that evaluations are undertaken not because the results are expected to be used but because someone simply feels they 'ought to be done' This criticism is so prevalent that it must be taken seriously" (p. 56-57).

Seymour (1993) recommends replacing reliance on mechanisms of cyclical accreditation and program review with application of TQM principles. These principles result in "an emphasis on processes as well as outcomes and the importance of systematic analysis. [While] TQM entails, to a large extent, a natural continuation of the traditional use of evaluative measures," (Dooris and Teeter, 1994, p. 51- 53) It also has some differences. TQM uses statistical data collected to focus on the process of improvement It also tries to deal with processes and the "needs of stakeholders such as students, faculty taxpayers, or alumni" (p. 54).

Benefits and Challenges of Total Quality Management

Sutcliffe and Pollock (1992) list the benefits of TQM as including "improved communications, increased involvement, improved quality and efficiency in a general context, and increased potential for productivity" (p. 22). But Wolverton (1993), points out that TQM approaches have "not been in place long enough to determine whether

documented improvements will become lasting models of quality or reflect only momentary glimpses of a fleeting vision" (p. 2).

In education there are particular challenges (Wolverton, 1993). The first deals with the concept of customer. "To faculty, calling students, their families and alumni, customers seems crass" (p. 3). There is a need to recognize that quality education "results from a multi-faceted effort on the part of all constituencies--students, their families, alumni, the community and faculty" (p. 3).

The second challenge deals with problems in implementation. These include:

1. a lack of commitment from the top;
2. an insufficient base of support, that is an insufficient number of proponents;
3. a failure to recognize costs of reeducating administrators, faculty and staff as well as the time required;
4. looking for quick fixes to complicated situations that took years to develop;
5 confining efforts to administrative and support functions and failing to recognize the need to systematically improve the educational environment.

Program Monitoring

Defining Monitoring

Monitoring is a frequently used term in education. As Rees (1993) points out "monitoring has its root in the Latin verb 'monere' meaning 'to warn' " (p. 4). She views it

as consisting of five steps. These are "(i) determining and communicating a standard of performance; (ii) continuously collecting data about the activity or performance, (iii) comparing that data to established standards; (iv) identifying if the resulting discrepancy is large enough to warrant action; and (v) taking corrective action as required" (p 6).

Rees stresses that "monitoring is *more than* a warning system; monitoring is scanning and then controlling - steering actions and behaviours in the appropriate or desired direction" (p. 7).

Program Evaluation and Program Monitoring

Sherwood-Fabre (1986) reviewed the relationship between program evaluation and program monitoring. She found that information on program monitoring literature was scarce. While monitoring was generally considered a continuous process, she found that the focus for program monitoring varied. It could be compliance with original design and target population, or it might be project inputs and initial effects or alternatively program effects and processes, or the focus might be project inputs and outputs. Buchan (1991) defines program monitoring as "an ongoing or longitudinal program evaluation" (p. 28).

Sherwood-Fabre (1986) also views program monitoring as a form of evaluation and states that it "requires the evaluator to follow the same steps he would in designing a long-term impact evaluation. The evaluator must work with decision makers in

determining what information they need to manage a program and how to collect that information" (p. 11).

From his work at the University of Pittsburgh, Cooley (1984) offers recommendations for improvement of educational practices. The first is an emphasis on client orientation.. The second deals with moving away "from formal program evaluation to a systems approach to program improvement (which [he refers] to as a "monitoring and tailoring approach") [The client orientation] requires a dialogue between client and evaluation researcher out of which the needs information are identified and strategies for obtaining it are defined" (p. 2).

The monitoring and tailoring approach involves developing and monitoring a variety of performance indicators. Cooley sees the purposes of this approach are "to help policy makers establish priorities for improving the system" (p. 3). The central assumption to the approach is that "important, significant improvements can be made to the educational system through fine tuning the system" (p. 4). Similar to the total quality approach to improvement, Cooley (1984) states: "You don't improve systems by solving problems in isolation. You can improve systems by monitoring indicators and tailoring practices" (p. 7)

Program Monitoring in Education

The concept of monitoring in educational evaluation as Cooley (1984) states is "not exactly novel" (p. 2). Stufflebeam et al (1971) described four stages in the process of

decision making. The first step is awareness. In planning decisions, awareness means monitoring " the program to identify unmet needs and opportunities" (p 256) In implementing decisions monitoring of barriers to success must be maintained as a change is implemented. In recycling decisions, monitoring attainments is necessary "to identify discrepancies between performance and objectives" (p 264), during and after a change has been implemented

Monitoring programs is viewed by Stufflebeam and colleagues (1971) as the first of four necessary parts of planning decision making. The others are design, choice and action. Context Evaluation services planning decisions through two modes. The first is contingency where "context evaluation searches for opportunities and pressures outside of the immediate system to promote improvement within it" (p. 219) The second mode of Context Evaluation is a congruence mode. This compares actual and intended system performance. Based upon descriptions of

> operating guidelines, curriculum guides, line-staff organizational schemes, the school calendar and budget, salary schedules, six-year plans, contracts with outside agencies, departmental mission statements, and ultimately daily lesson plans ... the congruence mode of context evaluation *monitors the system* [italics added] to determine whether or not goals are being achieved as intended. (p 220)

Stufflebeam (1971) states that these context evaluations should be provided annually to all decision bodies in the institution being served

In describing a program monitoring system for a School of Social Work, Buchan (1991) states the advantages of program monitoring include the ability to identify problems before they become unmanageable. It also allows administrators to look for trends, anticipate needs and constantly monitor target populations. Long term monitoring allows assessment of implemented changes to determine if the results were as anticipated or if further changes are warranted. The disadvantages she sites are the need of constant supervision of the program monitoring system, continuing commitment to the process, and initially a major commitment to the development process.

Program Monitoring in Higher Education

Program monitoring and annual reviews do not appear in the literature prior to the late 1980s. Since that time, a number of American colleges have adopted annual program monitoring processes which serve in various stages of program evaluation.

A brief outline of the purposes and indicators used for each post-secondary program monitoring processes found in the literature is located in Appendix C. A recurring theme with these processes is the need for providing timely data on programs to assist decision making. The program monitoring developed for the Delaware Community College (Heverly, 1989) was influenced by a Total Quality Philosophy. It involved recognizing that "one must gather data on processes" (p. 6). A number of different methods were tested before a final approach was decided upon. Heverly (1989) states

that the method they chose "will not necessarily be the optimal approach for other institutions" (p. 16).

In describing the indicators used at the Florida Community College (1989) it was pointed out that for the annual reviews to meet the needs of the College "indicators are subject to change as the needs of the College change" (p .5). Heverly (1989) also noted that her "model will need continual refinement and modification if it is to keep pace with managers' needs for information" (p. 18).

The literature suggests that program monitoring has recently become a more common feature of evaluation at the post-secondary level It also shows that all these approaches have selected indicators for measurement.

Indicators

Educational Indicators

The definitions of educational indicators vary considerably, "as do the names by which they are known - performance indicators, education indicators, education performance indicators, quality indicators, workload indicators, management indicators, indicators of success" (Wyatt, 1994, p. 104).

In his review of the literature on indicators, Wyatt (1994) describes the definition of Oakes (1986) as being the one most frequently cited today This definition states that indicators must have one of the following:

a) information that describes the education system's performance in achieving desired educational conditions and outcomes: the indicator is thus linked to the goals of the system and provides a benchmark for measuring progress;

b) information about features known through research to be linked with desired outcomes: such indicators have predictive value because when they change, other changes can be expected to follow;

c) information that describes central features of the system (e.g. inputs) in order to understand how the system works;

d) information that is problem-oriented;

e) information that is policy-relevant; indicators should describe educational conditions of particular concern to policy-makers and be amenable to change by policy decisions. (Oakes, 1986, pp. 1-2)

It is generally agreed (Wyatt, 1994; Shavelson , McDonnell and Oakes, 1991a) that "a single indicator or even a large number of indicators by themselves cannot fully describe the complexities of the schooling process" (Wyatt, 1994, p.107), and that a system of indicators is necessary.

Indicator Models

In his review of the literature on indicators, Wyatt (1994) concludes that the "context - input - process/output model - is still the most useful analytic scheme to systematise thinking about indicator systems" (p.107-108).

Educational systems and programs do not exist in a vacuum, but in fact are influenced by their environment. "An analysis of education must therefore be informed by an appreciation of the educational processes employed and the financial and other resources expended, against a background of contextual factors in the environment of education systems, schools and students" (OECD, 1993) It identified several context indicators for each of a demographic, social, and economic nature, for use in its set of international education indicators. These included gender differences in education and employment levels.

Input indicators are "the human and financial resources available to the education system" (Shavelson, McDonnell and Oakes, 1991b, p. 1). Windham (1988) described the various common forms of input indicators:

1. the teacher and teacher's characteristics;
2. facilities;
3. equipment;
4. educational materials;
5. administrative capacity.

Process indicators are "a set of nested systems that create the educational environment that children experience in school" (Shavelson, McDonnell and Oakes, 1991b, p. 1) The most commonly measured processes, according to Windham (1988) are:

1. administrative behaviour;
2. teacher time allocations;
3. student time allocations.

Output indicators are "the consequences of schooling for students from different backgrounds" (Shavelson, McDonnell and Oakes, 1991b, p. 1). Windham (1988) includes the following as being common output indicators:

1. attainment effects;
2. achievement effects;
3. attitudinal/behavioural effects;
4. equity effects of equality measures.

One other classification of indicators described by Windham (1988) is *outcome* indicators. In his model output and outcomes are viewed as the effects of the educational process, outputs being the more direct and immediate and outcomes the less direct and immediate. Examples of outcome effects are:

1. admission to further training and education;
2. achievement in subsequent education and training;
3. employment;
4. earnings;

5. attitudes/behaviours;

6. externalities.

In British Columbia, a conceptual model has been developed for institutional postsecondary indicators around a seven question framework produced by the Canadian Comprehensive Auditing Foundation. (1993). The Foundation also suggests various information and indicators related to each question.

Uses and Limitations of Indicator Systems

In reviewing the uses of performance indicators, Spee and Bormans (1992) identified five primary uses for them. The first use was monitoring, whose purpose is to "register developments in the system [and the monitoring system developed should correspond to] the scope of the decision-making processes. [A second use for performance indicators is in evaluation where the several indicators will enable] comment on the degree of goal-attainment [and] provide a basis for decision making. [Indicators can also improve dialogue by allowing communicating parties to attach the same meaning to concepts and] the dialogue concentrates on the institutions' performance judged in the light of their objectives and terms of reference" (p. 144). Two final uses of performance indicators include being the foundation of a coherent policy making process and as parameters in the resource allocation model.

Shavelson, McDonnell and Oakes (1991a) state what the literature generally agrees educational or social indicators systems cannot do. The first is that indicators

cannot set goals and priorities and the second is that indicators cannot evaluate programs. "Indicators cannot be substituted for in-depth evaluations" (p. 3).

Developing Indicator Systems

Blank (1993) outlined nine steps in developing an indicators system:

1. *Selecting indicators*: indicators should be selected based upon a conceptual framework and this should come from research, and the interests of decision makers;
2. *Obtain commitment and cooperation of leaders*: it is important to have top-level commitment to the process for easing the development process;
3. *Involve policy makers, educators, researchers, and data managers in selecting priority indicators*: the development process requires interaction and consensus. Nadeau (1992) states that indicators of quality "can only be recognized as such and be useful if it is defined by consensus of post-secondary education stakeholders" (p. 3);
4. *Select a limited number of indicators and minimize complexity in reporting*: limiting the number of indicators serves to restrict the length of reports and allows focusing of resources on critical indicators. Nadeau (1992) argues against the temptation of reductionism. He points out that "validity and reliability of indicators would argue for 'the more the merrier' and for triangulation" (p. 3);

5. *Organize a cooperative data system*. it is essential to use a common data collection instrument across all programs being measured;
6. *Work with other data users and providers to find commonalities and establish standards*;
7. *Design data forms;*
8. *Collect and edit data*. it is important to obtain data from all programs being studied. Follow-up of those who are late or uninterested is important;
9. *Report indicators*: combining of indicators into a total score or ranking of indicators should be discouraged. Indicators initially collected can serve as baselines for future comparisons within its own program (p 67-75)

Implications from the Literature

Development of a program monitoring model will require the same attention to detail as any program evaluation. While several examples of program monitoring are present in the literature, only one involves Canadian community colleges American community colleges are very different from Canadian, frequently serving as a stepping stone for university. Therefore program monitoring models applicable to American institutions do not readily apply in Canada. The New Brunswick monitoring system, while Canadian, serves a summative purpose to determine the number of future seat allocations in programs. Therefore it is necessary to develop a model unique to the Canadian setting, formative in nature and working in a Total Quality Management philosophy

Careful examination of the literature suggests that a decision making model has the most potential for directing the monitoring Stufflebeam's Context Evaluation services planning decisions. This matches the rationale for program monitoring, which is intended to be part of an overall evaluation plan for Cabot College.

Referring to Figure 1 (page 7), M003 corresponds to the contingency mode where "context evaluation searches for opportunities and pressures outside of the immediate system to promote improvement within it" (Stufflebeam et al, 1971, p. 218). M004 corresponds to the congruence mode which compares actual and intended performance within the "school system's statement of goals and policies [and involves monitoring] all vital aspects of the system" (p. 220). Therefore the program monitoring model developed will follow a congruence mode of Context Evaluation.

Stufflebeam's model recognizes the importance of defining the system in terms of its mission statement and philosophy. It also recognizes that "many techniques are useful in conducting both modes of context evaluation" (p. 221). Therefore the Total Quality Management philosophy, and the college mission statement, goals and objectives will all play important roles in determining who will be consulted in developing the monitoring model and what will be included. The college's monitoring process (Figure 1, p. 6) is shown to involve using a subset of indicators (M002). Stufflebeam's evaluation model is flexible enough to allow for the use of indicators as a means of determining if a program is meeting intended performance. A Total Quality philosophy will require, that in addition to monitoring inputs and outputs, processes must also be monitored.

Chapter III

Methodology

Introduction

The model chosen for the development of the program monitoring system was Stufflebeam's Context Evaluation model This was chosen because his model parallels the needs of the evaluation. Stufflebeam recommended an annual Context Evaluation for an educational organization (Stufflebeam et al, 1971) Program monitoring suggests a decision making evaluation because the results are to provide information for decision makers. The type of decision that arises from a Context Evaluation involves determining whether a further evaluation is needed, if minor changes can be made, or if the programs can continue as they are. The goal of program monitoring is to determine which programs need in-depth evaluation. Monitoring may also identify programs that have features that need further scrutiny.

Research Questions

This thesis seeks to answer the following questions:

1. Can the Stufflebeam Context Evaluation Model serve as a guide for program monitoring?
2. What indicators should be used for annual program monitoring at Cabot College?
3. What type of information can be gained from the use of program monitoring?

4 How effective is the program monitoring model in identifying a program needing in-depth evaluation?

Stufflebeam's CIPP Model

The monitoring framework involves following the procedure outlined by Stufflebeam for a Context Evaluation. Stufflebeam et al (1971) list many techniques that are useful in conducting Context Evaluation. These include "sample survey and opinionnaire techniques and experts and actors conferences. [Actors conferences refer to] conferences of persons who are representative of those who operate within a defined context, while experts conferences refer to conferences of persons who have specialized knowledge of a defined context. [Further information may be obtained through the] use of standardized tests, attitude scales, diagnostic surveys, school profiles, study visits to other systems, surveys of research literature, visitation by teams of experts, and continuing study of funding opportunities" (p 221).

For program monitoring, a set of indicators will serve as a profile of each program. The information for this profile was obtained from surveys of groups of individuals in a program

While many different data collection techniques are applicable to Context Evaluation, Stufflebeam et al (1971) also clearly specify the steps that should be followed

in doing an evaluation. These are outlined in Appendix E and served as a guide throughout the development and implementation of the program monitoring process

Delineating Information Needs

Defining the System

"It is essential that a system definition be established so that the world with which the evaluator must deal can be delimited to manageable proportions and those things of interest in it can be highlighted" (Stufflebeam et al, 1971, p.158) To keep the development of the program monitoring manageable, the model was developed specifically for full-time programs at Cabot College. These programs would fall under the direction of one of the Academic Managers and would not include part-time and contract training programs. The educational program will be considered a system. "A system is defined simply as having an input, a process, and an output" (Stufflebeam et al, 1971, p 124). Evaluation of this system will involve examination of the inputs, processes and outputs

Programs at Cabot College operate under a specific College Mission Statement and a set of goals and objectives (Cabot College Strategic and Operational Plan, 1994) At the institutional level, the President of Cabot College, like her counterparts at other community colleges in Newfoundland and Labrador, has adopted the Accountability Framework of the BC Colleges and Institutes (CCAF, 1993). These are listed in Figure 6 The College Mission Statement, goals and objectives, and these questions will help delineate the information needs for program monitoring.

Seven Basic Questions	
1	Does the institution have an adequate mission statement and a plan that clearly states its objectives, and are these clearly communicated to its community?
2	Does the institution offer programs and other services that meet the needs of its community?
3.	Does the institution attract and keep an appropriate number and mix of students?
4	Do students achieve appropriate outcomes?
5.	Does the institution obtain, organize and administer resources so that the above outcomes are achieved at a reasonable cost?
6.	Is the institution maintaining and building its intellectual and physical resources, including quality of its employees, curriculum, and physical plant?
7.	Does the institution have systems that produce information that enables management to answer these questions?

Figure 6 Proposed Accountability Framework for BC Colleges and Institutes. Note. From A Proposed Accountability Framework for Colleges and Institutes in British Columbia (p. 10) by the Canadian Comprehensive Auditing Framework, 1993, Ottawa: CCAF. Copyright 1993 by Canadian Comprehensive Auditing Foundation. Reprinted by permission.

Specifying the Decisions

Selection and Description of Programs. In January 1995, a letter was sent to the Director of Programs requesting a program to which the program monitoring could be applied The Director sent all Deans a copy of the letter inviting them to suggest a program or programs Over the next month two replies were obtained. The Coordinating

Instructor and Program Manager for a Technology program offered their program The Dean of Community Education and Applied Arts offered two programs

In late February, a discussion with the Director of Programs resulted in the decision to monitor the Technology Program and one of the Community Education Programs. These were chosen because their very different natures might identify problems in applying the program monitoring to a wide diversity of programs

Community Education Program This is a two-year program under the division of Community Education and Applied Arts. There are three instructors assigned to the program and a varying number of instructors who teach related subjects such as Mathematics, Communications Skills and Health There are also nine field instructors All three instructors assigned to the program are female, as are all field instructors Two of the three program instructors possess an M. Ed. The other has a B A.

The program generally accepts 30 students into the first year. The students are predominantly female. Academic qualifications require a high school graduation certificate with a 60% average or an Adult Education Graduation Certificate. While there are specific requirements for Language and Mathematics, there are none for Science. Besides the standard application, a personal information form, with a health certificate, references, and related experiences, is required. Personal interviews are then used to help in the selection of candidates for the program. Academic qualifications may be waived The program is offered at the Prince Philip Drive Campus

Technology Program This is a three-year program under the division of the Faculty of Engineering There are three instructors assigned to this program and a varying number assigned for related instruction There are no field instructors. All three instructors are male One has a B Eng., the second a B Sc., and the third an M. Eng.

The program generally accepts up to 20 students from the Common First Year Engineering Technology Program. Most of the students in this program are male. Entrance into the program requires a high school graduation certificate or Adult Basic Education Certificate with specific courses in Language, Mathematics and a Science. The Mathematics and Language requirements are the same as for the Community Education Program The program is offered at the Centre for Engineering Technology, Ridge Road Campus

Decision Setting Stufflebeam et al (1971) state that "criteria utilized in an evaluation have reference systems in the values of the audience to which information is provided" (p. 160) The Program Review Committee is the primary audience for the program monitoring and it has the authority to make recommendations for further program review to the President The President of the College then has the ultimate authority to accept or reject those recommendations Other decision makers within the College include the Directors, Deans, Academic Managers and the Board of Governors of the College. The President is a member of the Board of Governors. (See Appendix D for an outline of the College Administration.)

Decision influencers whose cooperation is essential for a successful evaluation and who would be potential audiences for the evaluation include students and instructors

The "decision timing and the interdependency of this timing with the evaluation must be established" (Stufflebeam et al, 1971, p.160). For program monitoring to be effective, the program must be ongoing long enough during the academic year for individuals in the program to have enough data on which to base their opinions for surveys. It must also be completed before the end of an academic year so that the Program Review Committee can make its recommendations to the President. Finally, the process must be efficient enough to allow all programs at the College to be monitored each year

With these considerations in mind, monitoring should take place toward the end of the second semester of the Academic year (late March - early April). The reports from monitoring should be made available to the Program Review Committee by the first week in June. This should allow them to make recommendations before the end of the Academic year (June 30).

Establishing Criterion Variables

"Criterion variables to be measured are the operationalization of the questions to be answered" (Stufflebeam et al, 1971, p.161). The questions to be answered about Cabot College programs can be derived from modifying the Seven Basic Questions from the BC Accountability Framework. (CCAF, 1993) This involves directing the questions toward programs rather than toward institutions (see Figure 7)

Stufflebeam et al (1971) state that a question implies possible actions. As many possible sources of information and indicators as possible were generated to determine answers to these questions. These sources were obtained from recommendations in the publication A Proposed Accountability Framework for Colleges and Institutes in British Columbia (CCAF, 1993)

Program monitoring is not an in-depth program evaluation, so all possible actions to obtain information are not possible. Therefore, a survey was developed to find out

Seven Questions for Programs at Cabot College	
1	Does the program match the College mission statement and objectives?
2	Does the program meet the needs of the community?
3	Does the institution attract and keep an appropriate number and mix of students in this program?
4.	Do students in this program achieve appropriate outcomes?
5	Does the institution obtain, organize and administer resources so that the above outcomes are achieved at a reasonable cost for this program?
6	In the area of this program is the institution maintaining and building its intellectual and physical resources, including quality of its employees, curriculum, and physical plant?
7	Does the institution have systems that produce information that enables management to answer these questions?

Figure 7. Adapted Accountability Framework for Cabot College Programs.
Note. Adapted from A Proposed Accountability Framework for Colleges and Institutes in British Columbia (p. 10) by the Canadian Comprehensive Auditing Framework, 1993, Ottawa: CCAF. Copyright 1993 by Canadian Comprehensive Auditing Foundation. Adapted by permission.

what decision makers at Cabot College viewed as extremely important information to answer the questions. To keep the number of indicators reasonable for monitoring purposes, a criterion of 50% of decision makers had to choose the information as extremely important in answering the question.

On January 6, 1995, the evaluator met with the Program Review Committee to describe progress to that date and to ask for opinion on the survey. The process was well received and minor changes were recommended to the survey. These were incorporated and a final version (see Appendix B) was sent to all decision makers previously identified at the College. Each was then contacted to conduct a telephone survey. Some chose to complete the survey by mail.

Two other groups (instructors and students) had been identified as decision influencers at the college. These were sampled to determine if they valued as less important the indicators chosen by decision makers. Surveys were sent to instructors active in the instructors' union. As six of the seven campuses had union representatives, this ensured representation from the various campuses of the college. Union executive and shop stewards could be expected to be aware of issues and concerns of the instructors they represent. The seventh campus was recently opened and is presently represented by a local at one of the other six campuses. Names of instructors were supplied by the President of the Union. Again, each respondent was given the option to complete the survey by mail or by phone.

To obtain the representation of the views of students, three surveys were mailed to the President of the Student Activities Council at each of the seven campuses.The Student Activities Council is elected by students at each campus. Names of only the Presidents of these councils were supplied by the Division of Student Services. Each President was sent three surveys with a request to complete one and invite two other students at that campus to complete and return the others. Trying to contact students at home was not feasible as class schedules run from 8:30 a.m. to 6:00 p.m. and many students are studying or working at night.

Clarifying the Preliminary Indicators. Initial results from the survey suggested twelve possible indicators and sources of information to answer the questions about programs. During the survey, it became apparent that some indicators and sources of information needed clarification. As Stufflebeam et al (1971) point out, "it is not likely that the decision maker will come to the evaluator with questions, answers, and actions . . . the evaluator then, must work at developing a close, continuing relationship with the decision maker" (p. 161-163). Interviewing the members of the Program Review Committee allowed the researcher to clarify the indicators and develop a collaborative relationship with members of that decision making body. Further clarification of the indicators involved analysing college documents and the literature.

A structured interview process was used. Fontana and Frey (1994) describe interviewing as "one of the most common and most powerful ways we use to try to

understand our fellow human beings" (p.361). In a structured interview, the interviewer asks each respondent a series of preestablished questions with a limited set of response categories. The interviewer controls the pace of the interview by using the questionnaire in a standardized manner. A group interview was considered and had the potential for being a rich source of data. However the logistics of getting the informants together made this method impossible

Interview Guide. The interview guide was constructed to ask for information and generate opinions from the informants. The guide was piloted with an experienced instructor. Following the piloting, the structure of the guide and the interview itself were examined. Suggestions for changes were incorporated into the guide. The modified guide, used with the key informants, is found in Appendix B. At this point, several indicators were still included as possible indicators for monitoring. These were subsequently eliminated as the last respondents sent in their surveys

Interview Process. The interview guide was constructed so that the interviewer could record the informant's responses directly onto the guide. A tape recorder was considered. The conditions for taping interviews were almost consistently unsuitable. Although the interviews took place in the offices of the informants, these offices were frequently shared, or open to the public for access to texts or computer resources. The background noise in some offices, for example in the Automotive area, made use of a tape recorder very difficult. To ensure reliability of the interview data, the interview was transcribed the same

day, sent back to the informant for commentary and corrections and these comments included in the final report.

Informants It was originally intended to contact only the eleven members of the Program Review Committee as they were chosen by the College's Total Quality Council to develop the program review process for the college. Several problems arose here. Two committee members were also the program manager and coordinating instructor for a program that would try out the monitoring process. To reduce the possibility that the researcher might bias the monitoring devices by giving more significance to their views, the decision was made to omit them from the interview process.

Some members were unavailable for interviewing due to work loads. One possible respondent failed to keep an appointment. Another was absent from work due to illness. One member resigned from the Committee between the time contacted for the interview and the actual interview.

Two instructors who were not part of the Program Review Committee were asked to participate. One of these had recently had a proposal accepted on developing a new Professional Development policy for the college. Interviewing this instructor was recommended by the Chair of the Program Review Committee. This instructor's input in Professional Development might be considered to reflect what administration of the college viewed as the role of Professional Development for instructors.

The Program Review Committee has no representatives from the trades program area. This was discussed with several members of the Committee, and one member

recommended an instructor whose views might represent other instructors in these areas. The recommended instructor had a long term background in the trade's area.

Interview Procedure. The informants were contacted (either by telephone and/or E-mail), the purpose of the interview was explained and appointments were scheduled at their campuses, in their offices. The time normally allocated was one hour. Most interviews were completed in this time, but one instructor and the administrator took much longer.

While several instructors had private offices, only one could close the door without being interrupted. The printer for the floor was in one instructor's office and people continually entered to pick up print jobs. Another instructor shared an office with four others who came and went and occasionally joined in the interview process. While reducing the confidentiality of the interview, that informant did not appear to be concerned and in fact welcomed and elaborated on comments from others in the room.

Interview Analysis. All the corrected transcripts were reviewed in their entirety. Each page of each transcript was coded with the informant's ID. The interview guides were then separated and the answers to each question were consolidated. Each set of answers was reviewed one at a time. Coloured highlighters were then used methodically to go through the answers and highlight themes that ran through each set of answers. Also highlighted were unique comments or answers. The information from instructors was kept separate from that of the administrator and the answers were compared and contrasted.

Document Analysis. Documents available in the educational literature and the Strategic and Operation Plan for the College (1994) were analysed to confirm and elucidate

indicators Another document referenced in the Strategic and Operational Plan was the "Employability Skills Profile What are Employers Looking for?" (Conference Board of Canada, 1993). This document was also used in the development of the indicators

Establishing Indicators and Decision Rules

The resulting indicators were quantified and assigned criteria. A general criterion of 65% was used for many indicators This represents a Grade Point of two at the college. Graduates of college programs must have Grade Point Average of two. As most programs have not had a recent review, this was considered a moderate standard to apply now In a Total Quality philosophy it can be viewed as a starting point for monitoring. In the future, if all programs meet this criterion, the criteria can be raised to allow for continuous improvement.

The criterion applied to the indicator related to employment was based on the March 1995 unemployment rate for the province of Newfoundland and Labrador, which was 19%. Some criteria applied were based on the presence or absence of an indicator. Each criterion was awarded a specific number of points. Each indicator was also examined to decide from whom the information could be obtained. The results are summarized in Figures 8 to 12

Evaluative Assumptions

Sampling. Numbers of students and graduates associated with a program at Cabot College are generally less than 50 per class. For this reason, all students and graduates were sampled. Sampling identified which year of the program the students were enrolled This would allow for a further breakdown of the data if administrators of the program should want to do this in future.

The numbers of instructors associated with an individual program are generally less than 20, so all instructors associated with the program were included in the survey The type of instructor was identified. Program instructors are those assigned to that particular program and who are supervised by the Program Manager for that program Related instructors are instructors whose assignments are in other programs or in the Academic subjects, but who teach one or two subjects for a varying number of hours during the week. Field instructors are those who are involved in instructional activities with the students in laboratories or in job-placement settings Distinguishing among the three groups would allow the identification of differences in responses for the groups

Stating Analysis Assumptions. Rates of return for internal surveys such as the program managers, instructors and students should be very high for the data to be acceptable. A rate of return of 80% of the students was considered acceptable Jackson (1988) calls 75% an excellent rate of return. Although the classes represent a captive audience, absenteeism on the day of administration of the survey could be expected to reduce the number of students completing the survey

Estimated results for surveys of graduates calculated using Jackson's formula (Jackson, 1988, p 173) would be 44% Therefore, an acceptable response rate for this group was considered 45% As the same procedure was being used, a similar response rate was considered acceptable for employers of graduates.

Plan for Obtaining Information

Collection of Data

Information Sources Figures 8 to 12 display the indicators to be measured. These also show the source of information for each indicator. Some indicators have only one source of information Examples of these are indicators associated with employer satisfaction. Other indicators, such as those associated with the mission statement, have multiple sources of information.

Instruments Separate instruments were prepared for each of the five different information sources. Effort was made to keep the instruments to one double sided questionnaire with limited space for comments. To assist in data management, each question had a code in the left hand margin associated with an indicator. The corresponding codes are found in the left columns of Figures 8 to 12.

Code for Analysis	Employer Satisfaction			
	Indicator	Information Obtained From	Criteria	Points Awarded
2-1	Percent of employers (including self employed) who feel the program provides the graduates with the communications skills necessary for the workplace.	Survey of employers	65%	1
2-2	Percentage of the employers (including self employed) who feel that the program fosters good teamwork skills in its graduates.	Survey of employers	65%	1
2-3	Percentage of employers (including self employed) who feel that the knowledge and skills of the program's graduates are up to date for the workplace.	Survey of employers	65%	1
8-1	Percentage of employers (including self employed) who are satisfied with the preparation of the graduates for the workplace.	Survey of employers	65%	1
	Graduates Employed			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
6-1	Percent of graduates employed after nine months	Survey of graduates	80- 100%	4
			60 - 79%	3
			40 - 59%	2
			20 - 39%	1
	Accreditation and Licensing Exams			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
5-5	Program received accreditation in last five years	Survey of program manager	If accred-idated	1
5-6	Percent of students passing licensing exams	Survey of program manager	65%	1

Figure 8. Indicators for Employer Satisfaction, Graduates Employed, and Accreditation and Licensing Exams.

	Resources Allocated to the Program			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
	Ratio of Program Resources Allocated to Number of Students	Survey of program manager	If within 2 standard deviations of College average	1
	Professional Development of Instructional Staff			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
7-3	Percentage of instructors reporting taking part in courses, seminars, workshops etc totalling six hours or more related to delivery of instruction. (In the past twelve months)	Survey of: instructors	65%	1
7-4	Percentage of instructors reporting taking part in courses, seminars, workshops etc. totalling six hours or more related to the areas of instruction. (In the past twelve months)	Survey of: instructors	65%	1
7-5	Percentage of instructors reporting reading (on a regular basis) journals related to their areas of instruction. (In the past twelve months)	Survey of: instructors	65%	1
7-6	Percentage of instructors reporting being involved with developing presentations, curriculum committees, program reviews, volunteer organizations, provincial or national committees related to their areas of instruction. (In the past twelve months)	Survey of: instructors	65%	1

Figure 9. Indicators for Resources Allocated to the Program and Professional Development of Instructional Staff.

	Up - to - Date Curriculum			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
1-6	Percentage of the program stakeholders who feel the teaching aids (equipment, models, computer resources etc.) are current	Surveys of: graduates instructors students program manager	65%	1
3-2	Percentage of graduates and students who felt that the instructors in the program were knowledgeable in their fields.	Surveys of graduates students	65%	1
3-3	Percentage of students and graduates who reported alternate forms of evaluation such as group projects or oral reports used in the program.	Surveys of: graduates students	65%	1
2-3	Percentage of stakeholders (employers, graduates, instructors and program manager) who feel that the knowledge and skills of the program's graduates are up to date for the workplace?	Surveys of graduates instructors program manager employers	65%	1
5-4	Program reviewed in previous three years.	Survey of: program manager	If reviewed	1
7-11	Course objectives revised in last three years.	Survey of: instructors	If revised	1
5-2	Program Advisory Committee meet to discuss curriculum issues.	Survey of: instructors program manager	If at least one meeting occurred in last twelve months	1
5-3	Presence of a cooperative aspect or job placement with feedback from employers about the program.	Survey of program manager	If present	1

Figure 10. Indicators of Up-to-Date Curriculum

	Indicators of Transfer of Information from Instructors to Students			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
3-4	Percent of students and graduates who reported they were provided with course outlines including the objectives for the courses.	Surveys of: graduates students	65%	1
3-5	Percent of students and graduates who reported being given written evaluation schemes at the beginning of courses.	Surveys of: graduates students	65%	1
1-4	Percentage of stakeholders who reported the program fostering a positive work ethic.	Surveys of: graduates students instructors program manager	65%	1
1-5	Percentage of stakeholders who described the program atmosphere as cooperative and respectful.	Surveys of: graduates students instructors program manager	65%	1
	Indicators of Transfer of Information from Students to Instructors			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
3-6	Percentage of students and graduates who reported feeling comfortable with discussing problems with course content with instructors.	Surveys of: graduates students	65%	1
3-7	Percentage of students and graduates who reported feeling comfortable with discussing problems with teaching methods (delivery of instruction) with instructors.	Surveys of: graduates students	65%	1
7-1	Percentage of instructors who reported use of instructor evaluation forms.	Surveys of: instructors	65%	1
7-2	Percentage of instructors who reported use of course evaluation forms.	Surveys of: instructors	65%	1

Figure 11 Indicators of Transfer of Information Between Instructors and Students.

	Mission Statement			
Code for Analysis	Indicator	Information Obtained From	Criteria	Points Awarded
1-1	Percent of program stakeholders that consider the program provides an optimal student learning environment.	Surveys of: graduates instructors students program manager	65 %	1
1-2	Percent of program stakeholders who feel all students were treated equally	Surveys of: graduates instructors students program manager	65%	1
4-1	Percent of program stakeholders who think that this program effectively and efficiently uses resources	Surveys of: instructors program manager	65%	1
1-3	Percent of program stakeholders who think that the support services of the college were responsive to needs of students in the program.	Surveys of graduates instructors students program manager	65%	1
3-1	Percent of students and graduates who felt that the teaching in the program was motivating and innovative	Surveys of: graduates students	65%	1
2-1	Percent of program stakeholders who feel the program provides the students with the communications skills necessary for the workplace.	Surveys of: graduates instructors program manager employers	65%	1
2-2	Percentage of the program stakeholders who feel that the program fosters good teamwork skills in students.	Surveys of: graduates instructors program manager employers	65%	1
5-1	The presence of a Total Quality Team for the Program.	Survey of program manager	If present	1

Figure 12. Indicators for the Cabot College Mission Statement

The student questionnaire was piloted with two Adult Basic Education students. This was to ensure that the language used in the student questionnaire was understandable. Minor changes were required within two questions to clarify the meaning. This involved supplying examples or a slight explanation. Any recommended changes to the student questionnaire were also applied to the graduate and instructor questionnaires. The instructor questionnaire was piloted with three instructors. No changes were recommended.

Collection of Data Letters and questionnaires for each individual or groups of individuals surveyed may be found in Appendices A and B respectively. For each program, the individuals sampled, and the procedure used, are described below.

1. Program Manager: A survey was sent with a letter and a return envelope. All mail was directed internally

2 Instructors. All instructors associated with the program were sent questionnaires and letters. These included instructors assigned to the program, instructors in related courses, and for the Community Education Program, it also included field instructors from a college facility.

3 Students. Arrangements were made with instructors in the program for the researcher to meet each class of students, explain the nature of the research and distribute the student questionnaires and letters of information and consent. The letters of consent and questionnaires were completed and collected then. No instructors were present during this period. All students present in that particularly

scheduled class were surveyed. The class was chosen to provide the most likelihood of attendance.

4. Graduates: A list of original home phone numbers for the graduates was obtained from the Registrar's office. All original telephone numbers were contacted and an attempt made to obtain a current mailing address for all graduates in each program. Each was then sent a copy of the questionnaire, a letter of information and consent and because permission was being sought to contact the employers, a copy of that questionnaire was provided for their information. Each was requested to return the questionnaire and letter of consent in the stamped addressed envelope provided.

5. Employers of graduates: Following consent from the graduate, letters and questionnaires were sent to the employers of the graduates with the request they be returned in the stamped addressed envelope provided.

Organization and Analysis of Data

Most questions on the questionnaire had a code which corresponded to the codes in Figures 8 to 12. As each questionnaire was received, it was assigned a code number Data for each survey was entered into a data file suitable for reading by an SPSS program Codes were assigned for each category of respondent. Students were classified as to year of program and instructors according to one of the three instructional assignments. This would allow a further breakdown of the data in the future.

An SPSS program to determine frequencies was used, the advantage being that further data analysis could be obtained if the program was in place. Should the monitoring framework be adopted by the college this would allow more efficient analysis of multiple programs.

Plan for Providing the Information

The major audience for program monitoring was the Program Review Committee. Both an oral and written report were prepared for this committee for the end of the first week in June.

Multiple copies of program-specific reports were supplied to the program managers for the two programs monitored. These could then be distributed to all interested instructors.

Chapter IV

Results

Introduction

The program monitoring model was developed during the period from December, 1994 to March, 1995. Two programs volunteered to go through the monitoring process. All monitoring results were completed and the reports made available to the Program Review Committee by June, 1995.

Development of the Indicators for Program Monitoring

Decision Makers and Decision Influencers

The major decision making body for program monitoring was the Program Review Committee. The number of individuals on this Committee changed through the development process, with one member resigning in December, 1994, three new members joining in mid-January, 1995 and a member resigning in February, 1995. Generally the members consisted of three management and eight instructors. Other decision makers within the college at that time were the Board of Governors including the President (N=13), Directors (N=2), Deans (N=6), and Academic Managers (N=9). An outline of the Administration of the College is found in Appendix D. The Director of Programs is the Chair of the Program Review Committee and the Academic Manager for Technology

Programs is also on the Committee. The third management position is filled by the Manager of Human Resources. Instructors on the Committee were chosen by the Total Quality Team for the college and either volunteered or were invited to join the Committee.

Decision influencers within the college include instructors and students. The faculty union would be expected to represent the views of instructors. The Student Activities Councils served a similar role for students. The exact nature of the role varies with members and campus. Table 1 summarizes the return rates for the various groups.

The return rate for the Program Review Committee may reflect the changing membership at that time. Three new members had joined the Committee just as the survey was being distributed. Another group with a poor rate of return was the Board of Governors of the College. With the exception of the President and one instructor, all members serve as volunteers and hold other positions within the community. While given the option to complete the survey by phone, only the President of the Board of Governors chose to complete the survey in this manner. The others responded by mail.

The number of responses was very good for instructors, however the rate of return for students was poor. It was especially poor when one considers there was 100% return from one campus and no return from two campuses. Some Student Activities Councils may not view completion of the surveys as part of their mandate. Timing may also have

Table 1
Responses to Survey Classified According to Decision Making Groups

Decision Makers	Number Responded	Decision Influencers	Number Responded
Program Review Committee (Includes one of the three Directors and one of the nine Academic Managers)	7 (60 %)	Instructors (Not members of the Program Review Committee)	14 (70%)
Directors (Not including the Chair of the Program Review Committee)	1 (100%)	Students (From 4 of the 7 campuses)	6 (30%)
Deans	4 (67%)		
Academic Managers - (Not including the member of the Program Review Committee)	8 (100%)		
Board of Governors (Includes the President)	4 (30%)		
Total	24 (62%)	Total	20 (50%)

been a factor. The survey was distributed a week before Winter Carnival and a national student demonstration organized against a Federal Government Funding Policy. Mid-term examinations for most programs generally follow Winter Carnival week

Indicators Identified by Decision Makers

Indicators for Question 1 Table 2 shows the ranking in percent for each of the 12 possible indicators for Question 1. One source of information met the criterion of at least 50% of decision makers considering it to be extremely important. This was *data on levels of satisfaction in employers*. Decision influencers also considered this to be extremely important (65%). Comments on the question indicated that a number of decision makers (5) and decision influencers (2) considered that regular meetings of a Program Advisory Board would ensure that the program would meet the needs of the community. Another method suggested by decision makers (4) was a graduate employment profile

Several decision makers (3) felt that levels of satisfaction in graduates would also provide this information. One decision maker felt that they would be less likely to focus on "negative aspects" and employed graduates "can assess how the program prepared them for their chosen field."

Indicators for Question 2. Table 3 shows the survey results for Question 2. No indicators met the criterion for inclusion in annual program monitoring. There was also very little difference between decision makers and decision influencers in their ranking

Four decision makers suggested the need for a Public Relations policy for programs. Examination of the effectiveness of high school promotions was mentioned by two decision makers.

Table 2

Survey Results by Respondent Grouping for Question 1

Indicators and information to answer Question 1: *Does the program meet the needs of the community?*	Group	Respondent Ranking (in Percent)				
		1	2	3	4	5
1 Local labour market trends such as current/forecast levels of unemployment	D M			25.0	45.8	29.2
	D I	5.0	10.0	5.0	30.0	50.0
2 Trends in demand occupations	D M			8.7	60.9	30.4
	D I			10.5	52.6	36.8
3 Trends in critical skill shortages	D M			8.3	50.0	41.7
	D I		5.0	10.0	45.0	40.0
4 Trends in skill development requirements.	D M			8.7	56.5	34.8
	D I			5.0	50.0	45.0
5 Trends in student enrolment	D M	4.2	16.7	45.8	20.8	12.5
	D I		31.6	26.3	21.1	21.8
6 Trends in achievement.	D M	4.2	12.5	33.3	41.7	8.3
	D I	10.5	21.1	31.6	26.3	10.5
7 Trends in retention	D M	4.2	12.5	37.5	37.5	8.3
	D I	10.5	26.3	26.3	26.3	10.5
8 Data on levels of satisfaction in community groups	D M	4.2	8.3	29.2	29.2	29.2
	D I	10.5	10.5	21.1	21.1	36.8
9 **Data on levels of satisfaction in employers.**	D M			4.2	33.3	**62.5**
	D I		5.0	5.0	25.0	65
10 Program availability elsewhere	D M	4.2	12.5	41.7	37.5	4.2
	D I	15.8	21.1	31.6	10.5	21.1
11. Data on levels of satisfaction in students	D M		4.2	20.8	54.2	20.8
	D I	5.3		26.3	26.3	42.1
12 Data on levels of satisfaction in transfer institutions	D M		8.3	29.2	45.8	16.7
	D I	11.		16.7	27.8	44.4

Code Group D M= Decision Makers; D I = Decision Influencers

Respondent Ranking: 1 = Unimportant; 5 = Extremely Important

Indicators bolded meet the criterion for inclusion in annual program monitoring.

Table 3
Survey Results by Respondent Grouping for Question 2

Indicators and information to answer Question 2: *Does the institution attract and keep an appropriate number and mix of students in this program?*	Group	Respondent Ranking (in Percent)				
		1	2	3	4	5
1. Enrollment patterns of male versus female.	D M	25 0	8.3	20.8	25.0	20 8
	D I	25.0	10 0	25 0	20 0	20 0
2. Numbers of applicants	D M	4.3		26.1	60.9	8.7
	D I		10 5	42 1	31 6	15 8
3. Percentage capacity achieved.	D M	4.5		31 8	50.0	13 6
	D I	5.3	15 8	42.1	10 5	26 3
4. Trends in retention	D M			20.8	54.2	25.0
	D I	5 0	20 0	30 0	20 0	25 0

Code. Group: D M= Decision Makers; D I = Decision Influencers
Respondent Ranking. 1 = Unimportant, 5 = Extremely Important
Indicators in bold meet the criterion for inclusion in annual program monitoring

One decision maker queried whether the number of applicants should receive the same weight as other indicators suggested At a meeting with the Chair of the Program Review Committee, he explained that numbers of applicants need not mean much for a program. He referenced the discontinued Heavy Equipment Operator program which has several hundred applications on file. Although there are many applicants, the program was discontinued as employment prospects for these graduates were presently nil

One student felt that retention was the most important indicator listed while another student felt that programs should have a screening process An instructor

expressed the need for bridging programs to help keep students in programs. No indicators were chosen for this question as none met the criterion

Indicators for Question 3 Three indicators met the criterion for this question. These were *data on receipt of accreditation, passing licence examination etc.*, (58.3%), *data on impact on employability*, (54.2%), and *data on levels of satisfaction with respect to adequacy and post-study utility for employers*, (50.0%). More than 50% of decision influencers also expressed that these three indicators are extremely important. The detailed results are in Table 4.

One decision maker ranked employer satisfaction low because most graduates in his/her programs are self-employed. Another decision maker mentioned the need for measuring the "worth of instruction i.e. the instructor". A student mentioned the importance of the instructor to student outcomes.

Indicators for Question 4. *Resources allocated to program* was the only indicator that 50% of decision makers felt to be extremely important in answering question 4. The results are found in Table 5.

One decision maker felt that there was a need for this indicator to be compared to other "similar programs" to get a "true picture." Another decision maker questioned the difficulty of measuring indicators 3, 5 and 6. An instructor felt that indicators 7 - 11 would be very subjective and difficult to measure. While these did not meet criteria for inclusion in program monitoring, indicators 8 - 11 were considered extremely important by more than 50% of decision influencers. A decision maker also indicated that one resource for

the institution is instruction and felt the nature and quality of instructional delivery should be measured

Table 4
Survey Results by Respondent Grouping for Question 3

Indicators and information to answer Question 3. *Do students in this program achieve appropriate outcomes?*		Group	Respondent Ranking (in Percent)				
			1	2	3	4	5
1.	Data on total numbers of students completing programs.	D M		4.2	16.7	45 8	33.3
		D I	5.0	5 0	30 0	35 0	25 0
2.	Do students in this program achieve appropriate outcomes?	D M	20.8	16 7	37 5	12.5	12 5
		D I	21 1	31.6	31 6	15.8	
3.	Data on attainment of all students completing programs.	D M			8 3	50.0	41 7
		D I		10 0	40.0	30 0	20 0
4.	Data on attainment of males versus females of those students completing programs.	D M	20.8	16.7	37.5	16.7	8.3
		D I	11 1	33 3	50 0	5 6	
5.	**Data on receipt of accreditation, passing licence examinations etc.**	**D M**		4.2	16.7	20 8	**58.3**
		D I	10 0		10 0	30.0	50 0
6.	Data on impact on income.	D M	4 3		39.1	43 5	13 0
		D I		5.3	15 8	73 7	5 3
7	**Data on impact on employability.**	D M	4.2			41 7	**54.2**
		D I			10.0	25.0	65 0
8.	Data on levels of satisfaction with respect to the adequacy and post-study utility for students	D M			12 5	50 0	37 5
		D I			10.0	45 0	45 0
9.	Data on levels of satisfaction with respect to the adequacy and post-study utility for instructors.	D M			30.4	43 5	26 1
		D I		5.3	10 5	42 1	42 1
10.	**Data on levels of satisfaction with respect to the adequacy and post-study utility for employers.**	**D M**			12.5	37.5	**50.0**
		D I			10 5	36 8	52 6

Code: Group: D M= Decision Makers; D I = Decision Influencers

Respondent Ranking. 1 = Unimportant; 5 = Extremely Important

Indicators in bold meet the criterion for inclusion in annual program monitoring

Table 5
Survey Results for Respondent Grouping for Question 4

Indicators and information to answer the question *Does the institution obtain, organize and administer resources so that the above outcomes are achieved at a reasonable cost for this program?*		Group	Respondent Ranking (in Percent)				
			1	2	3	4	5
1	**Resources allocated to program**	**D M**	4.2			45.8	**50.0**
		D I			11.1	27.8	61.1
2.	Number, nature and mix of teaching, teaching support, operational and administrative staff	D M		4.2	16.7	45.8	33.3
		D I			15.8	36.8	47.4
3	Nature and amount of facilities and equipment.	D M			4.2	50.0	45.8
		D I		5.3	5.3	36.8	52.6
4	Student-instructor ratios	D M			20.8	54.2	25.0
		D I				27.8	72.2
5.	Ratio of resources dedicated to the learning process to the resources allocated for general operations	D M	8.3		20.8	50.0	20.8
		D I	5.3		21.1	21.1	52.6
6.	Time spent on learning process by instructors as opposed to administrative time.	D M		8.3	25.0	37.5	29.2
		D I				42.1	57.9
7.	Utilization of facilities (at, above or below capacity).	D M			16.7	58.3	25.0
		D I	5.6	5.6	11.1	55.6	22.2
8	Adequate access for students of facilities.	D M		4.2	16.7	45.8	33.3
		D I	5.6		11.1	16.7	66.7
9	Adequate access for students of equipment.	D M		4.2	4.2	50.0	41.7
		D I	5.6			16.7	77.8
10.	Adequate access for students of services.	D M			12.5	50.0	37.5
		D I	5.6		11.1	27.8	55.6
11	Adequate access for students of instructors.	D M				58.3	41.7
		D I		5.6		27.8	66.7

Code: Group D M = Decision Makers; D I = Decision Influencers
Respondent Ranking: 1 = Unimportant; 5 = Extremely Important
Indicators in bold meet the criterion for inclusion in annual program monitoring.

Table 6
Survey Results by Respondent Grouping for Question 5

Indicators and information to answer Question 5: *In the area of this program, is the College maintaining and building its intellectual and physical resources, including quality of its employees, curriculum, and physical plant?*		Group	Respondent Ranking (in Percent)				
			1	2	3	4	5
1	**Measure of professional development of instructional staff.**	**D M**			8.3	29.2	**62.5**
		D I	10.0	10.0	10.0	10.0	60.0
2.	Provision of a positive working environment	D M			12.5	50.0	37.5
		D I		5.3	5.3	26.3	63.2
3.	**Provision of up-to-date curriculum.**	**D M**				8.3	**91.7**
		D I			10.0	15.0	75.0
4.	**Provision of current teaching aids of high standard.**	**D M**				41.7	**58.3**
		D I		5.0	5.0	20.0	70.0
5	General condition of physical resources.	D M			8.3	62.5	29.2
		D I		10.0	20.0	15.0	55.5

Code: Group. D M= Decision Makers; D I = Decision Influencers

Respondent Ranking: 1 = Unimportant; 5 = Extremely Important

Indicators in bold meet the criterion for inclusion in annual program monitoring

Indicators for Question 5. Three indicators met the selection criterion, *measure of professional development of instructional staff* (62.5%), *provision of up-to-date curriculum* (91.7%) and *provision of current teaching aids of high standard* (58.3%) Table 6 also indicates that more than 50% of decision influencers also felt these to be extremely important.

Three decision makers mentioned the need to obtain some measure of the professional development of instructional staff through some type of review process. One student felt that keeping curriculum up-to-date is often overlooked and another felt that even when the latest technology is available in the program he/she is in, the instructors do not know how to use it

Table 7
Survey Results by Respondent Grouping for Question 6

Indicators and information to answer Question 6: *Does the institution have systems that produce information that enables management to answer these questions?*		Group	Respondent Ranking (in Percent)				
			1	2	3	4	5
1	Are there open channels of information from instructional and support staff to management?	D M			12.5	41.7	45.8
		D I	5.0		10.0	20.0	65.0
2.	**Are there open channels of information from instructional staff to students?**	**D M**			8.7	39.1	**52.2**
		D I		5.0	5.0	25.0	65.0
3	Is there regular transfer of information from management to instructional and support staff?	D M			8.3	45.8	45.8
		D I		5.0	10.0	25.0	60.0
4.	**Is there regular transfer of information from students to instructional staff?**	**D M**			12.5	33.3	**54.2**
		D I		5.0	10.0	20.0	65.0
5	Is there opportunity for students to discuss issues with College management?	D M		4.2	12.5	45.8	37.5
		D I	5.0		15.0	30.0	50.0

Code. Group: D M= Decision Makers; D I = Decision Influencers

Respondent Ranking: 1 = Unimportant; 5 = Extremely Important

Indicators in bold meet the criterion for inclusion in annual program monitoring.

Indicators for Question 6 Table 7 shows that two indicators meet the criterion for this question. *Are there open channels of information from instructional staff to students* (52.2%) and *is there regular transfer of information from students to instructional staff* (54.2%).

Two decision makers commented that all these processes should be happening but they are not. An instructor felt that these were important but that management does not view them as important. One decision maker viewed the role of TQM as particularly important here with its emphasis on participative management and Quality Work teams One instructor queried whether it is possible to develop measurable indicators for these

Indicators for Question 7. Both indicators were felt to be extremely important by both decision makers and influencers The results are described in Table 8.

Table 8
Survey Results by Respondent Grouping for Question 7

Indicators and information to answer Question 7: *Does the program match the College mission statement and objectives?*	Group	Respondent Ranking (in Percent)				
		1	2	3	4	5
1. **The goals and objectives for the program.**	**D M**	4.2		4.2	25.0	**66.7**
	D I		5.3	10.5	15.8	68.4
2. **College mission statement and objectives.**	**D M**	4.2	4.2		33.3	**58.3**
	D I		5.6	22.2	16.7	55.6

Code: Group: D M= Decision Makers; D I = Decision Influencers

Respondent Ranking: 1 = Unimportant; 5 = Extremely Important

Indicators in bold meet the criterion for inclusion in annual program monitoring

One decision maker suggested using the College's Five Year Plan to determine if the program met the mission statement Another stated that the mission statement itself is so broad that it would be impossible for a program not to match it It was suggested that the college vision and values derived from the mission statement are important.

Several decision makers and influencers felt that most people in the college community would not know the mission statement. It was also mentioned that while a program might meet the mission statement on paper, the only way of knowing if it truly did, would be to ask students, instructors and administration.

Summary of Indicators Chosen A total of twelve indicators met the selection criterion Table 9 summarizes these As was pointed out during the survey, some of these could be difficult to measure No single measure could be used for a number of these indicators For this reason, interviews were conducted with as many as possible of the Program Review Committee and others recommended by them. The interview data, in conjunction with the literature, were used to elucidate information about four of the indicators. The interview guide (see Appendix B) was constructed based on a preliminary analysis of the data Two other indicators that appeared to be included in the initial data analysis were examined in the interview process As the final surveys were obtained and data analysis completed, these indicators were found to not meet the criterion for inclusion and were eliminated. Information from the Strategic and Operational Plan and the Conference Board of Canada was also used to clarify other indicators.

Specification of Indicators

Indicators Developed from the Interview Process Interviews with seven instructors and the Chair of the Program Review Committee were analysed for recurring themes Whenever possible the indicators suggested from the interview data were validated by similar findings from the literature. At times this was not possible, and it was recognized that these indicators may be valid only within the Cabot College community

Table 9
Summary of Indicators Selected by Decision Makers

	Indicators and Information Chosen by 50% of Decision Makers as Extremely Important to Include in Annual Program Monitoring
1.	Data on levels of satisfaction in employers
2.	Data on receipt of accreditation, passing licence examinations etc
3.	Data on impact on employability.
4.	Data on levels of satisfaction with respect to the adequacy and post-study utility for employers.
5.	Resources allocated to program
6.	Measure of professional development of instructional staff
7.	Provision of up-to-date curriculum
8.	Provision of current teaching aids of high standard
9.	Are there open channels of information from instructional staff to students?
10.	Is there regular transfer of information from students to instructional staff?
11.	The goals and objectives for the program
12.	College mission statement and objectives

Indicators of Measure of Professional Development of Instructional Staff. Professional development is not formalized at Cabot. At the present time, it is not mandatory. Medical Sciences programs have a mandatory professional development component in their accreditation process, but this is unique to these programs. The well-developed accreditation process of the Medical Science programs is viewed as exemplary by members of the Program Review Committee and all seem to view its characteristics as important to emulate where possible.

All interviewees agreed that professional development was necessary. The need for accountability was expressed by several instructors but not by the member of management. Instructors with backgrounds in education strongly value the need for professional development in this area. Instructors with no education background devalue this area and focus on professional development in subject matter. In Medical Sciences the original accreditation policy involved no reference to teaching. This has changed and teaching is an essential component of professional development for instructors in those programs.

Four general areas were identified for professional development. These were delivery of instruction, area of instruction, readings in areas of instruction, and participation in committees within and external to the college.

These fit categories from the literature. Norris (1985) and Imel (1990) describe similar lists of activities for community college and vocational instructors. Willis and Tosti-Vasey (1988) found that reading of professional journals was a major means to maintaining professional competence. The other factor they found was *involvement*

(emphasis added) in professional organizations. Both Norris (1985) and Imel (1990) stress the need for a systematic plan with feedback mechanisms. These mechanisms are presently not part of Cabot College.

The time frame for the indicators selected was based on the Medical Sciences requirement of 36 hours of professional development over a three year period, or on average twelve hours per year. Table 10 shows the indicators selected and indicates what type each is.

Table 10
Indicators for Professional Development

Indicators Associated with a Measurement of Professional Development of Instructional Staff	
Indicator	Indicator Type
Percentage of instructors reporting taking part in courses, seminars, workshops etc. totalling six hours or more related to delivery of instruction. (In the past twelve months)	Input
Percentage of instructors reporting taking part in courses, seminars, workshops etc. totalling six hours or more related to the areas of instruction. (In the past twelve months)	Input
Percentage of instructors reporting reading (on a regular basis) journals related to their areas of instruction. (In the past twelve months)	Input
Percentage of instructors reporting being involved with developing presentations, curriculum committees, program reviews, volunteer organizations, provincial or national committees related to their areas of instruction. (In the past twelve months)	Input

Indicators of Up-to-Date Curriculum. A literature search in this area revealed very little information. Curriculum review and evaluation in the literature does not focus on currency for the workplace. Fishwick (1991) called for complete utilization of devices such as computer-assisted techniques to update education activities for engineers. All informants agreed that current teaching aids of high standard fit under the more general area of up-to-date curriculum. Therefore the indicator of up-to-date teaching aids was put in the general category of up-to-date curriculum.

Harris (1982) describes a technique for keeping occupational education current. His paper describes the use of the DACUM (Developing A Curriculum) process where a facilitator obtains input from a group of experts in an occupation. This requirement for input from a group of experts corresponds to the call by all those interviewed for a Program Advisory Committee meeting regularly if a program is to keep up-to-date.

Indicators were further developed around the interview data. Although some instructors mentioned five years was adequate for program review, the literature (Heverly, 1989, Friedel, 1989) suggests in today's changing environment, it may be necessary to have more frequent reviews. Three years was chosen as it matched the Medical Sciences accreditation process, which is highly favoured by the Program Review Committee. As many of the college programs are not reviewed, but many courses are changed and updated by individual instructors, this can keep programs up-to-date. This was also included in the indicators to be measured. The time frame selected was the same as for the program review.

There was frequent mention of feedback from industry, from employers and some suggested graduates. This resulted in two more indicators. One involving asking stakeholders if the graduates are up-to-date for the workplace and the other had to do with the presence of a job placement component with feedback from employers. A co-op component had also been suggested in the original survey by an instructor as a way of insuring a program was kept up-to-date.

Several respondents made the suggestion that students can be aware of instructors being up-to-date in their fields. This can also be expected of graduates. Therefore an indicator asking if these two groups felt their instructors were knowledgeable in their fields was included.

One other indicator came from the remarks of the Chair of the Program Review Committee on the need for communications skills for graduates. This also corresponded to the call for "effective communication skills" (p.5) in the Strategic and Operational Plan for the College (1994). The Employability Skills Profile from the Conference Board of Canada (1993) also called for educational programs to provide for development of this ability so that graduates are prepared for today's workplace. The indicator included was the one asking for alternative means of evaluation such as group and oral reports. The indicators developed are found in Table 11. Five of these indicators are process indicators

Table 11
Indicators of Up-to-Date Curriculum

Up - to- Date Curriculum	
Indicator	Type of Indicator
Percentage of the program stakeholders who feel the teaching aids (equipment, models, computer resources etc.) are current	Input
Percentage of graduates and students who felt that the instructors in the program were knowledgeable in their fields	Input
Percentage of students and graduates who reported alternate forms of evaluation such as group projects or oral reports used in the program.	Process
Percentage of stakeholders (employers, graduates, instructors and program manager) who feel that the knowledge and skills of the program's graduates are up-to-date for the workplace.	Output
Program reviewed in previous three years.	Process
Course objectives revised in last three years.	Process
Program Advisory Committee meet to discuss curriculum issues.	Process
Presence of a cooperative aspect or job-placement with feedback from employers about the program.	Process

Indicators of Information Transfer from Students to Instructors. Two clearly indicated means of communication were instructor and course evaluation forms. This resulted in two indicators of the number of instructors using course and instructor evaluation forms.

It was mentioned by the Instructor from Medical Sciences that this is such a standard practice with those programs that it had been surprising to find out that this didn't happen everywhere. It appears the process is not formalized in most programs, but is considered valuable. For this reason two indicators relating to whether the students felt comfortable with discussing problems with course content and delivery were included. Table 12 summarizes these. All of these indicators can be classified as process indicators

Table 12
Indicators of Transfer of Information from Students to Instructors

Indicators of Transfer of Information from Students to Instructors	
Indicator	Type of Indicator
Percentage of students and graduates who reported feeling comfortable with discussing problems with course content with instructors.	Process
Percentage of students and graduates who reported feeling comfortable with discussing problems with teaching methods (delivery of instruction) with instructors	Process
Percentage of instructors who reported use of instructor evaluation forms.	Process
Percentage of instructors who reported use of course evaluation forms	Process

Table 13
Indicators of Transfer of Information from Instructor to Students

Indicators of Transfer of Information from Instructors to Students	
Indicator	Type of Indicator
Percent of students and graduates who reported they were provided with course outlines including the objectives for the courses	Process
Percent of students and graduates who reported being given written evaluation schemes at the beginning of courses.	Process
Percentage of students and graduates who reported the program fostering a positive work ethic	Output
Percentage of students and graduates who described the program atmosphere as cooperative and respectful.	Process

Indicators of Transfer of Information from Instructor to Students This was the question with the greatest variety of answers from instructors Several mentioned the evaluation process for the course, several more mentioned a professional attitude and work ethic. "Attitudes and behaviours required to get, keep and progress on a job and to achieve the best results" is also described by the Conference Board of Canada (1993) as critical personal management skills required in the Canadian workforce. Two respondents mentioned the curriculum - one that it must be up-to-date and it is important for the instructor to make it relevant; the second mentioned that it was important for students to

Table 14
Indicators of Employer Satisfaction

Indicators of Employer Satisfaction	
Indicator	Type of Indicator
Percent of employers (including self-employed) who feel the program provides the graduates with the communications skills necessary for the workplace.	Output
Percentage of the employers (including self-employed) who feel that the program fosters good teamwork skills in its graduates.	Output
Percentage of employers (including self-employed) who feel that the knowledge and skills of the program's graduates are up-to-date for the workplace	Output
Percentage of employers (including self-employed) who are satisfied with the preparation of the graduates for the workplace	Output

recognize how knowledgeable the instructor was in the field being taught. For one instructor the emphasis was on good course outlines and clear evaluation practices and standards. Medical Sciences programs have handbooks for students, outlining all of these processes. These handbooks give very specific guidelines for professional behaviour in the workplace and copies of the evaluation forms used by instructors as they evaluate students on a set of specific skills. Students are evaluated in this manner twice a year and this evaluation is given to them. If the instructor feels it needs to be done more often, then it is. From this information the indicators in Table 13 were generated. Three of these were process indicators.

Development of Indicators of Employer Satisfaction Information about sources of satisfaction in employers was found to be extremely important for both questions 1 and 4. The Conference Board of Canada's (1993) employability skills provides suggestions as to what employers feel to be critical for the Canadian workforce. One was the already included work ethic. Another two involve academic skills. The first are good

Table 15
Indicators Associated with College Mission Statement and Objectives

Indicators for the Mission Statement and Objectives of Cabot College	
Indicator	Type of Indicator
Percent of program stakeholders that consider the program provides an optimal student learning environment.	Process
Percent of program stakeholders who feel all students were treated equally.	Process
Percent of program stakeholders who think that this program effectively and efficiently uses resources	Process
Percent of program stakeholders who think that the support services of the college were responsive to needs of students in the program.	Process
Percent of students and graduates who felt that the teaching in the program was motivating and innovative.	Process
Percent of program stakeholders who feel the program provides the students with the communications skills necessary for the workplace.	Output
Percentage of the program stakeholders who feel that the program fosters good teamwork skills in students.	Output
The presence of a Total Quality Team for the Program.	Process

communications skills and the second is the ability to use "technology, instruments, tools and information systems effectively [and also] access and apply specialized knowledge from various fields (e.g , skilled trades, technology, physical sciences, arts and social sciences)" (Conference Board of Canada, 1993) Also the third major area identified by the Conference Board is teamwork skills Both teamwork skills and effective communication skills are also included in the Cabot College "Vision of Our Students" (Strategic and Operational Plan, Cabot College, 1994, p 5). Also included are job specific, marketable skills. The indicators are listed in Table 14.

Indicators Associated with the Mission Statement One of the comments made during the original survey was that the mission statement is so broad that it would be impossible not to match it. The mission statement is " to provide a broad range of educational opportunities of consistently high quality in response to the changing educational needs of the community" (Strategic and Operational Plan, Cabot College, 1994, p 4) The objectives for the college are more specific. The college has listed in the Strategic and Operational Plan seven goals, and each goal has associated with it a number of objectives A number of these objectives can translate into indicators for programs. Another comment made in the original survey was that on paper any program might appear to meet the mission statement and objectives and that the students, instructors and program administration should be asked if there is a match. This was also taken into consideration in the development of the indicators. Table 15 outlines the indicators developed through

Table 16
Indicators of Employability, Resources Allocated to the Program, Accreditation and Licensing Exams

Other Indicators	
Indicator	Type of Indicator
Percent of graduates employed after nine months..	Outcome
Ratio of program resources allocated to number of students	Input
Program received accreditation in the last five years	Input
Percent of students passing licensing exams.	Output

scrutiny of the goals and objectives as outlined throughout the Strategic and Operational Plan, (Cabot College, 1994)

Development of Other Indicators. Two of the remaining three indicators and information chosen could be obtained by a single measurement. There are the first two indicators in Table 16. The remaining "data on receipt of accreditation, passing licence examinations etc " would be applicable for some, but not all programs, as not all programs have these processes. This was separated into two measurable indicators, one for the program and the second referring to the number of students passing licensing exams. These are also listed in Table 16.

Implementation of Program Monitoring

Introduction

The two programs that underwent the monitoring process were a Community Education Program and a Technology Program. All questionnaires and accompanying letters were prepared and ready for distribution by the middle of March, 1995. The surveys were developed to meet the deadlines required for the monitoring. This resulted in four questions being included in the instructor survey that represented an indicator that was not included in those selected by decision makers. Final analysis of results from the survey showed this indicator would not meet the criterion. While the questions remained on the survey they were not used in the monitoring process and not included in the analysis.

An information meeting was scheduled with the Program Manager and Coordinating Instructor for the Community Education Program on March 22, and for the Technology Program on March 23. The meeting with the Community Education instructors had to be rescheduled for March 28, as the Program Manager's office was being relocated from one campus to another. The meeting was later rescheduled again, as the Program Manager became ill. The Dean of Community Education replaced him at the meeting on March 31, and all instructors (3) assigned to the program attended this meeting. This delay in meeting with the instructional staff of the Community Education program resulted in problems distributing the questionnaires to the students in Year II of

the program The day of the meeting corresponded to the day of their last exam They were beginning a work placement term the following week and therefore the questionnaires could not be distributed to them until they returned to the college on May 1 for a brief meeting

Table 17
Questionnaire Responses Compared According to Respondent Category and Time to Respond

Category of Respondent	Number of Responses for Community Education Program	Range of Response Times (days)	Number of Responses for Technology Program	Range of Response Times (days)
Program Manager	1 (100%)	28 days	1 (100%)	7 days
Instructors:				
Program	3 (100%)	5-14	3 (100%)	7-34
Related	2 (33%)	10	3 (43%)	5-14
Field	6 (67%)	7-21	----	
Students:				
Year I	29 (97%)	N/A	----	
Year II	20 (100%)	N/A	13 (81%)	N/A
Year III	------		8 (67%)	N/A
Graduates	8 (50%)	10-30	1 (13%)	60
Graduates Giving Permission to Contact Employer	4 (22%)		0	
Employers	3	10-21	0	

The meeting with the Coordinating Instructor and Program Manager for the Technology Program occurred on schedule and arrangements were made to distribute the questionnaires to the Year II and III students and collect their responses on March 31. All questionnaires were distributed to the students, program manager and instructors on that date. Questionnaires were mailed out to all graduates at the same time.

On April 5 the questionnaires were distributed to the instructors and program manager of the Community Education program. Questionnaires were also mailed out to the graduates of the program. A brief meeting was arranged with the students in Year I of the program and questionnaires were distributed and collected from them on the same date. The meeting with Year II students took place on May 1 when they returned from their work placement for a short meeting and luncheon at the college.

The numbers of respondents and the time range for return of the questionnaires are indicated in Table 17.

Indicators of Employer Satisfaction

Results for the Indicators of Employer Satisfaction are reported in Table 18. Only one graduate of the Technology Program responded to the questionnaire and this student did not give permission to contact the employer. Therefore no employers were contacted for this program.

Table 18
Results for Indicators of Employer Satisfaction for the Two Programs

Employer Satisfaction				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percent of employers (including self-employed) who feel the program provides the graduates with the communications skills necessary for the workplace.	100 (N=2)	1	No Responses	
Percentage of the employers (including self-employed) who feel that the program fosters good teamwork skills in its graduates.	100 (N=3)	1	No Responses	
Percentage of employers (including self-employed) who feel that the knowledge and skills of the program's graduates are up-to-date for the workplace.	67 (N=3)	1	No Responses	
Percentage of employers (including self-employed) who are satisfied with the preparation of the graduates for the workplace.	50 (N=2)	0	No Responses	

The Community Education program had three responses from the four employers for whom permission was obtained for contact. The comments about these graduates indicated satisfaction One employer remarked that the graduate was willing to accept feedback. The other employer stated that the graduate felt she was lacking in knowledge

about special needs children, and about dealing with social workers who come to the daycare to remove children from home environments which were considered unsatisfactory by Social Services. The other employer had hired the graduate in a supervisory role. For this reason the employer felt unable to answer several of the survey questions. This employer commented on the graduate's preparation as a supervisor. The employer stated that the graduate has had to develop "an assertive method of communication. We are pleased with [the] progress."

Table 19
Results for Indicators of Graduates Employed for the Two Programs

Graduates Employed				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percent of graduates employed after nine months	72 (N=7)	3	1 Respondent	-

Indicators of Graduates Employed

There was one response from the graduates of the Technology Program. While the respondent indicated on the survey that he/she was presently employed, when the graduate hand delivered the survey at the college, the graduate said that he/she had just received a

layoff notice Therefore it was not possible to obtain an indicator of employment for this group Table 19 shows the results for this indicator

The Community Education Program had eight graduates reply. This is 50% of the graduates for whom mailing addresses were obtained One did not indicate an employment status

Indicators of Accreditation and Licensing Exams

Neither of these program have an accreditation procedure in place with any provincial or national body. There are also no licensing exams for either program.

Table 20
Results for Indicators of Resources Allocated to the Two Programs

Resources Allocated to the Program		
Indicator	Community Education Program Result	Technology Program Result
Ratio of program resources allocated to number of students.	$4700	$8000

Indicators of Resources Allocated to the Program

The different values for the two programs are found in Table 20. In a personal communication from the Director of Finance (May 10, 1995) it was explained that at

present this ratio is not calculated for programs As such it is not possible to assign points for this indicator on the basis of two programs.

Table 21
Results for Indicators of Professional Development for Instructors in the Two Programs

Indicators Associated with a Measurement of Professional Development of Instructional Staff				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percentage of instructors reporting taking part in courses, seminars, workshops etc. totalling six hours or more related to delivery of instruction. (In the past twelve months)	55 (N=11)	0	17 (N 6)	0
Percentage of instructors reporting taking part in courses, seminars, workshops etc. totalling six hours or more related to the areas of instruction. (In the past twelve months)	70 (N=11)	1	83.3 (N 6)	1
Percentage of instructors reporting reading (on a regular basis) journals related to their areas of instruction. (In the past twelve months)	82 (N=11)	1	100 (N 6)	1
Percentage of instructors reporting being involved with developing presentations, curriculum committees, program reviews, volunteer organizations, provincial or national committees related to their areas of instruction. (In the past twelve months)	100 (N=11)	1	100 (N 6)	1

Indicators Associated with a Measure of Professional Development of Instructional Staff

While all program instructors for both programs responded to the questionnaire, only a small number of the related instructors responded to the questionnaires. The data in Table 21 refer to instructors in all categories who responded.

Indicators of Up-to-Date Curriculum

The results for indicators of up-to-date curriculum are found in Table 22. While several indicators should include the responses from graduates of the program, the rate of response for graduates of the Community Education Program was 50% for whom addresses could be obtained (N=8) and the Technology Program had one response from a graduate.

The first indicator in the table refers to the stakeholders who feel the teaching aids are current. All stakeholders except employers were asked to respond to this. A breakdown by category indicates significant differences between the two programs. Three of the four instructors and program manager responded yes to this for the Community Education program. This would meet the criterion for allocation of points. In the Technology Program, five of the six instructors who responded said that the teaching aids were not current. The program manager made a comment that it was not possible to answer the question with a yes or no answer. This would not have met the allocation for points if the students who responded had not indicated that they considered the teaching aids current.

Table 22
Results for Indicators of Up-to-Date Curriculum for the Two Programs

Up - to- Date Curriculum				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percentage of the program stakeholders who feel the teaching aids (equipment, models, computer resources etc.) are current.	88 (N=59)	1	68 (N=25)	1
Percentage of graduates and students who felt that the instructors in the program were knowledgeable in their fields.	98 (N=53)	1	100 (N=21)	1
Percentage of students and graduates who reported alternate forms of evaluation such as group projects or oral reports used in the program.	89 (N=56)	1	100 (N=21)	1
Percentage employers, graduates, instructors and program manager who feel that the knowledge and skills of the program's graduates are up-to-date for the workplace.	96 (N=22)	1	80 (N=5)	1
Program reviewed in previous three years.	Yes	1	Yes	1
Course objectives revised in last three years.	100 (N=7)	1	100 (N=6)	1
Program Advisory Committee meet to discuss curriculum issues.	Yes	1	Yes	1
Presence of a cooperative aspect or job-placement with feedback from employers about the program.	Yes	1	Yes	1

The Community Education Program is always undergoing some form of review according to comments from the manager and instructors. However the manager pointed out that a full program review had not been undertaken in the last ten years.

Table 23
Results for Indicators of Transfer of Information from Instructors to Students for the Two Programs

Indicators of Transfer of Information from Instructors to Students				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percent of students and graduates who reported they were provided with course outlines including the objectives for the courses.	100 (N=56)	1	100 (N=21)	1
Percent of students and graduates who reported being given written evaluation schemes at the beginning of courses.	95 (N=56)	1	100 (N=20)	1
Percentage of students, graduates, instructors and program manager who reported the program fostering a positive work ethic.	93 (N=69)	1	100 (N=28)	1
Percentage of students, graduates, instructors and program manager who described the program atmosphere as cooperative and respectful.	68 (N=66)	1	96 (N=27)	1

Table 24
Results for Indicators of Transfer of Information from Students to Instructors for the Two Programs

Indicators of Transfer of Information from Students to Instructors				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percentage of students and graduates who reported feeling comfortable with discussing problems with course content with instructors.	50 (N=52)	0	57 (N=21)	0
Percentage of students and graduates who reported feeling comfortable with discussing problems with teaching methods (delivery of instruction) with instructors.	40 (N=52)	0	48 (N=21)	0
Percentage of instructors who reported use of instructor evaluation forms.	43 (N=7)	0	50 (N=6)	0
Percentage of instructors who reported use of course evaluation forms.	60 (N=10)	0	50 (N=6)	0

Indicators of Transfer of Information from Instructors to Students

Again it should be noted that the response rate for the Community Education Program was 50% for graduates and that there was one response from a graduate of the Technology Program. Table 23 shows the results for the two programs.

One instructor commented that the program atmosphere in the Community Education Program as "cooperative and respectful between colleagues." A number (N=5) of first year students in the program said that there was a need for the instructors to show respect to the students. Some students reported being "treated like a child" (N=4). All instructors and the program manager responded with a yes to whether the atmosphere in the program was cooperative and respectful. Most graduates (5 of 6) and second year student (17 of 19) also responded yes. In first year, the majority (18 of 28) responded no.

Indicators of Transfer of Information from Students to Instructors

This was one area where both programs did nor meet the criterion for points for any indicators. The Technology Program results do not include graduates for the first two indicators listed. Table 24 has the results for these indicators.

There was very little difference in responses for the two years of the Technology Programs on the first two indicators. Fifty-three percent (N=7) of the second year students reported feeling comfortable with discussing problems with the course content with their instructors. Sixty-two percent (N=5) of the third year students reported the same. There was considerable differences for the Community Education Program. Thirty-three percent (N=8) of the first year students reported feeling comfortable, while seventy-two percent (N=13) of the second year students reported the same.

In the Technology program forty-six percent (N=6) of first year students and fifty percent (N=4) of the second year students reported feeling comfortable discussing

problems with the delivery of instruction Again there was considerable difference for the Community Education Program. Eleven percent (N=3) of first year students reported feeling comfortable, while eighty-two percent (N=14) of the second year students felt comfortable discussing delivery of instruction.

There were only two comments made by Technology students relating to these indicators. One said that "most instructors are excellent, but there are problems with one " Another said that the questions about instructors were difficult to answer as one instructor may be good but "another not."

There were many comments from the first year Community Education students with respect to their instructors. A number (N=5) said that instructors won't answer questions. Several said "they answer questions with questions " Three referred to find the instructors "intimidating" and one said that instructors are "unwilling to change "

Indicators Related to the Mission Statement

Table 25 shows the results for the indicators related to the Mission Statement A great number of comments were made for indicators in this category In the Community Education Program six first year students remarked that instructors favoured some individuals over others. One student remarked that there was favouritism expressed toward students with better marks. Several commented that there was an effort made by the instructors to "weed people out of the program." Two students remarked that older students are treated more respectfully than others. No comments were made in this area by

second year students. This difference is also reflected in the responses to the questionnaires One hundred percent (N=23) of the first year students responded No to the question about equal treatment of students. Fifty-six percent (N=10) of the second year students responded No. In commenting about this question one instructor said that some students need more help than others A graduate said that "some instructors have pet students." The manager felt that it was not possible to answer that question as time does not permit observation of the classrooms.

For the indicator concerning the responsiveness of support services to the students, there were differences for categories. In the Community Education Program, eighty-one percent (N=22) of the first year students felt that they were responsive. In second year, fifty percent (N=8) felt they were responsive. In the Technology Program thirty-one percent (N=4) of the second year students felt the services were responsive and thirteen percent (N=1) of the third year students responded Yes to the question.

Comments were made relating to this indicator. One program manager said that some services are good but others are poor. A Community Education student referred to problems with the registrar's office, while a Technology student referred to lack of a health plan. The program manager for the Continuing Education program described a "definite lacking of counselling services."

Students in the Technology program (N=3) complained of inadequate access to computer technology after class time The college computers are being used "day and night by other classes."

Table 25

Results of the Indicators Relating to the Mission Statement for the Two Programs

Indicators Related to Mission Statement				
Indicator	Community Education Program Result	Points Awarded	Technology Program Result	Points Awarded
Percent of program stakeholders (excluding employers) that consider the program provides an optimal student learning environment.	88 (N=66)	1	92 (N=25)	1
Percent of program stakeholders (excluding employers) who feel all students were treated equally.	38 (N=60)	0	92 (N=23)	1
Percent of instructors and program manager who think that this program effectively and efficiently uses resources	100 (N=9)	1	60 (N=4)	0
Percent of program stakeholders (excluding employers)who think that the support services of the college were responsive to needs of students in the program.	70 (N=59)	1	19 (N=25)	0
Percent of students and graduates who felt that the teaching in the program was motivating and innovative	77 (N=51)	1	95 (N=25)	1
Percent of the graduates, instructors, employers and program manager who feel the program provides the students with the communications skills necessary for the workplace.	95 (N=20)	1	100 (N=5)	1
Percentage of the graduates, instructors, employers and program manager who feel that the program fosters good teamwork skills in students.	100 (N=16)	1	100 (N=4)	1
The presence of a Total Quality Team for the Program	No	0	See Manager's Note	

Again there were differences between groups in the Community Education program for the question about the instruction being motivating and innovative. Fifty-four percent (N=14) of the first year Community Education students felt it was so, whereas one hundred percent (N=25) of second year and graduates reported a YES response for this question.

The program manager for the Technology program stated it was not possible to answer a definitive Yes or No to the presence of a Total Quality Team.

Program Monitoring Scores

There were a total of 36 possible points obtainable for the Community Education Program. The Program obtained 26 points This was a 72%.

As there was no response from graduates in the Technology Program the number of possible points obtainable was 27. The Program obtained 20 points. This was a 74%.

General Comments from Survey

Several Continuing Education students, graduates and instructors (N=4) commented on the need for improvement of the facilities used. This involved making the classroom and practical area separate. One student in first year and another in second year said the program needed revision.

During the administration of the questionnaire to students in the two years of both programs, assurances were sought by many students that the information would be strictly

anonymous and their instructors would not be able to look over their completed questionnaires. Another comment voiced during completion of the survey by students was that the questions were sometimes difficult to answer by Yes or No This was also mentioned by a Continuing Education instructor and by the program manager for the Technology program.

In the Technology Program, two program instructors described a lack of hands on and equipment training. There was also a mention of under funding by instructors (N 2) Six students in second year and three students in third year also stated that there was a need for more hands on experience.

Chapter V

Summary, Conclusions and Recommendations

Summary of the Study

This study chose to use Stufflebeam's Context Evaluation as a guide for the development of a program monitoring process for Cabot College of Applied Arts, Technology and Continuing Education. This evaluation model was chosen because a decision making model flexible enough to allow the use of indicators to serve as a profile for a program was required.

Advantages of Context Evaluation for Development of Program Monitoring Model

Stufflebeam's Context Evaluation provided a clear set of guidelines for the development of the program monitoring model. The evaluative questions required in the specification of decisions fit into the set of questions from the BC Accountability Framework (CCAF, 1993) adopted by the President of the College.

Worthen and Sanders (1987) describe the greatest strength of the management-oriented approach "is that it gives focus to the evaluation" (p.83). Program monitoring as an efficient yearly formative evaluation of all programs requires a definite focus and a clear set of results for the decision maker. The Context Evaluation provided this for program monitoring

The recognition of scheduling limitations in Stufflebeam's approach fitted into the need of the Program Review Committee to make decisions at a time appropriate to the College's Academic Planning Year.

The systems approach of the decision making model fitted into the input-process-output model for indicator systems.

Disadvantages of Context Evaluation for Development of Program Monitoring Model

This approach relies on identifying and working with the decision maker. A problem at Cabot College is identifying who the decision making individuals are. The Program Review Committee is supposed to be the decision making body. Their mandate however, involves consultation with stakeholder groups within the college, and their reports are to go to the President who in turn answers to the Board of Governors.

The make-up of this Committee has changed considerably since its inception. There have been resignations for reasons including individuals leaving the college and layoffs. Working with this Committee has been difficult for the evaluator as several members have been unavailable for meetings due to their instructional workload.

House (1980) queries the potential for a decision making evaluation to be too "unfair and even undemocratic" (p. 231), because it gives the decision maker such preference. This potential is there in the procedure used to identify the most important sources of information to the evaluative questions. The results of the survey (Tables 2-8) showed that decision influencers did select as extremely important the same indicators as

decision makers. The decision influencers surveyed also indicated a number of other indicators they felt were extremely important. It is possible that not including these may lead to an unfair program monitoring process.

Strengths of the Indicators Chosen for Annual Program Monitoring at Cabot College

The indicators chosen for program monitoring represent all aspects of a system. There were indicators of input, process, output and outcomes derived around a set of questions about programs In a Total Quality Management philosophy, indicators of process are very important as the emphasis is on examining and monitoring processes.

The indicators chosen were developed within Cabot College and therefore should be most applicable to that setting. Setting a criterion for the program monitoring of 65% allows room for continual improvement of this process. This is also a fundamental feature of a Total Quality philosophy.

Weaknesses of the Indicators Chosen for Annual Program Monitoring at Cabot College

The indicators were chosen on the criterion that 50% of decision makers considered them extremely important sources of information for answering a seven question framework. The question *does the institution attract and keep an appropriate number and mix of students in this program?* had no indicators chosen as none met the criterion One indicator associated with this question is the program retention rate. A form

of this is included in all other program monitoring models in the literature (See Appendix C.)

There were also a number of indicators considered to be extremely important by decision influencers that were not included in the monitoring because decision makers considered them to be less important.

Information Obtained from the Program Monitoring Process

It was not possible to obtain a valid measurement of several of the indicator categories. There was a poor rate of return from graduates of the Community Education program and no return from the Technology program. This in turn made it impossible to obtain a valid measurement of indicators associated with the employers.

Indicators related to students in the program had a very high response rate and valuable information could be obtained from these. Instructor response, other than program instructors was poor. Therefore the indicators associated with instructors does not reflect all instructors associated with a program. Indicators requiring information from instructors, graduates and employers are particularly weak as a result of poor response rates.

Effectiveness of the Program Monitoring Process

The program monitoring process was not effective in obtaining information for a number of the indicators. Poor response rates from stakeholder groups resulted in a

reduced number of indicators on which to develop a monitoring score. The two programs had different numbers of indicators included in their total program monitoring score. If this process was being used with all programs to identify the ones needing an in-depth review, it would be essential they be compared on the same set of indicators.

Mail-outs of the surveys accompanied by a stamped self-addressed envelope to their current mailing address was not a satisfactory way to obtain responses from this sample of graduates.

The poor response from instructors in the related areas and the field instructors indicates a voluntary response process is ineffective in obtaining these individuals' views.

The time frame of five or more weeks to obtain responses from some stakeholders within the college suggests that the distribution of surveys within the college was appropriately timed for analysis and reporting to the Program Review Committee in early June.

The process also highlighted some problems in both programs. These problems were different. In the Technology program there were problems with access to computer resources and hands on experience. In the Community Education Program, there were problems with program atmosphere and treatment of students. Both programs scored poorly on indicators associated with transfer of information from students to instructors.

Conclusions

The researcher can make the following conclusions about the use of Stufflebeam's Context Evaluation for designing and implementing an annual program monitoring process at Cabot College of Applied Arts, Technology, and Continuing Education

1. Stufflebeam's Context Evaluation provides a focused process for the development of the program monitoring process. The difficulty at Cabot College lies in identifying the decision makers for program monitoring and developing a working relationship with these individuals.
2. The procedures used in this program monitoring process were effective in obtaining responses from students, program managers, and program instructors They were not effective in obtaining responses from related instructors, graduates and employers.
3. Even the limited results from this program monitoring was effective in identifying concerns of students and program instructors For the Community Education program the results from the graduates and employers suggest that the program is producing satisfactory graduates, but that there may be a need for inclusion of some additional instruction in the area of Special Needs.
4. Analysis of the student responses indicate different years of a program may have different frequencies of responses.

Recommendations

1 To obtain information from graduates and employers, an exploration of the cost effectiveness of a telephone survey of these two groups for these two programs should be explored. Indicators associated with these two groups were ranked highly by decision makers and methods for obtaining this information should be explored.

2 The information from the initial survey on indicators should be carefully examined by the Program Review Committee to determine if the criterion for selection of indicators should be revised, particularly to include indicators that would provide information for all questions.

3 There is a need for Cabot College to have an evaluator in place to oversee the development of the program monitoring process. This research shows that this process is time consuming and involved many weeks of full time commitment from the researcher. It is unreasonable to expect the volunteers of the Program Review Committee, with its changing membership, to be able to continue the development process.

4 While the response from program instructors was excellent, these instructors and their program managers had volunteered to take part in the research. The results from the related instructors suggest that instructors who do not volunteer to take part in this process may be less willing to respond to questionnaires. Therefore some process may need to be put in place for instructors to respond to the

questionnaires. This may require mandating the process or educating the instructors on the values of program monitoring

5. Further monitoring should be carried out on programs which have a well-developed accreditation process as well as programs which have not been reviewed in the last five years. This could allow determination of whether monitoring will highlight differences between programs that have been reviewed recently and frequently and programs which have not
6. Indicators for students should be examined in further monitoring to determine if point allocation for these should be carried out on a year of program basis
7. Stufflebeam's Context Evaluation should guide the continued development of the monitoring process at Cabot College.

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Appendix A

Correspondence

8 Maxse St.
St. John's, NF
A1C 2S7

January 5, 1995

Mr. Rod Chafe
Director of Programs and Academic Services
Cabot College of Applied Arts, Technology
and Continuing Education
Prince Philip Drive Campus
St. John's, NF

Dear Mr. Chafe,

Thank you very much for meeting with me on December 22, 1994. The support you expressed for my thesis project is greatly appreciated.

At that meeting I described how my research involves development of a program monitoring model for Cabot College and how this research fitted into the proposed program review action plan of the Program Review Committee.

As you are aware, I am presently working on the development of the set of indicators that will be used in the program monitoring process. When these are completed, the next stage will be applying the monitoring process to a program at the College.

I would appreciate it if you could recommend a program whose staff would be interested in taking part in this aspect of my research.

Essential to completion of my research is a report of the monitoring process for the program studied. This report would be given to the administrators of the program studied for their use. The program would also be able to repeat the monitoring process and monitor changes in indicators over time. The information provided should be a valuable indication of how the program is performing.

Any program planning on instituting changes might be interested in being monitored prior to the changes. Monitoring again when changes are in place would determine if the changes are showing measurable effects on particular indicators.

It should also be noted that the program assisting my research would also be serving to develop the program review plan for the College. The results of my research will be given to the Program Review Committee to aid in providing a method for a part of their proposed plan

As part of this research will be taking place while I'm on educational leave, it is necessary that the program be at a location in St. John's. To reduce any bias in my research it would be preferred if the program was not in the area of Engineering Technology where I normally instruct.

I wish to thank you again for your support and encouragement and look forward to your reply.

Sincerely,

Mary M. Wadden

8 Maxse St.
St. John's, NF
A1C 2S7

January 5, 1995

Dr. Edna Turpin-Downey
President
Cabot College of Applied Arts, Technology
and Continuing Education
Prince Philip Drive Campus
St. John's, NF

Dear Dr. Turpin-Downey,

I am an academic instructor with the Engineering Technology programs. I have just begun a semester of educational leave during which I will be completing two courses and starting research on my thesis project

My supervisor is Dr. Mary Kennedy and the project involves developing a program monitoring process to identify programs which should undergo a complete program review.

I have had a recent meeting with Mr. Rod Chafe who was very supportive of my research. I will be making a presentation to the Program Review Committee which he chairs on January 6, 1995 to describe my research to date.

The first step in my research involves determining a set of indicators which will be used in the monitoring process.

I would like to ask your permission to survey individuals within the College to gain input as to what members of the College community view as important indicators to be measured. These include selected groups of students, instructors, and members of the administration.

I have included with this letter a copy of the survey which I will be using.

Thank you very much for your cooperation in this. If you have any questions, I can be reached at home at 754-2912 or at MWADDEN@fac.cabot

Sincerely,

Mary M. Wadden

January 16, 1995

Dear Program Review Committee Memeber:

Please find enclosed the revised survey I will be using over the next several weeks to obtain information to assist in determining which indicators should be used in the program monitoring model.

I enjoyed the opportunity of meeting with you on January 6th and your input was greatly appreciated. Any suggestions you can make regarding this project would be also greatly appreciated.

To gain results from this survey in a more time-efficient manner, I hope to conduct the surveys with other stakeholder groups by phone.

I am looking forward to your reply to this survey and thank you again for your cooperation and support.

Sincerely,

Mary M. Wadden

Mr. R. Chafe
Director of Programs and Academic Services
Cabot College of Applied Arts,
Technology and Continuing Education
Prince Philip Drive Campus

January 15, 1995

Dear Mr. Chafe,

Thank you for your suggestions for improvements for my survey and your response for a program for application of the program monitoring model when it is developed. These changes have been incorporated into the survey and I am ready to carry out the survey when permission is received from Dr. Turpin-Downey

To gain results from this survey in a more time-efficient manner, I hope to conduct the surveys with some stakeholder groups by phone.

Would it possible for you to send an E-Mail of support for cooperation with this survey to the Deans and Academic Managers as I would like to survey them by phone? (I would send the survey to them ahead of time so they would have the document available to them prior to the phone call)

Thank you again for your cooperation and support and questions may be directed to me at 754-2912 or E-Mail: MWADDEN@FAC.CABOT.NF.CA.

Sincerely,

Mary M. Wadden

January 20, 1995

Dear

The following survey is part of research for my thesis in the M.Ed. program at Memorial University of Newfoundland. It is my hope that this research will also benefit Cabot College. Your cooperation is essential to its success

As part of its Strategic and Operational Plan, Cabot College is developing a thorough Program Review Policy. A component of this will involve the annual monitoring of all programs at the College.

The first step of my thesis project involves the identification of those indicators considered important in determining how well programs are functioning at the College. From these a subset will be selected to use in annual monitoring of all programs.

This annual monitoring is intended to aid in program improvement with the results to be used to flag programs needing an in-depth program review. Once in place, the annual monitoring data should also assist programs undergoing review to examine trends in the program from data collected over previous years.

An accountability framework of seven questions adapted from the British Columbia System has been chosen to report on program performance. The following survey is intended to gain insight from representatives of all stakeholders in Cabot Colleges' programs as to the information and indicators they feel would best assist in analyzing and understanding performance in relation to each question.

Sometime during the next seven to ten days I will be contacting you by phone to complete this survey. I would greatly appreciate the committment of about ten minutes of your time. Any questions may be directed to me at 754-2912 or E-Mail: MWADDEN@FAC.CABOT.NF.CA.

Sincerely,

Mary M. Wadden

December 1, 1994

Ms. Suzanne Seebach
Director of Operations
Canadian Comprehensive Auditing Foundation
55 Murray Street, Suite 210
Ottawa, Ontario
K2N 5M3

Dear Ms. Seebach,

I am an instructor at Cabot College of Applied Arts, Technology and Continuing Education in St. John's, Newfoundland. I am also a graduate student in a M. Ed program and my thesis project involves developing an annual program monitoring system for our College.

I would like to obtain permission to use the Accountability Framework and Illustrative Factors developed by your organization and published in the document, "Reporting on Effectiveness in Colleges and Institutes".

Although the Framework was developed for institutions, I think it and the Factors will provide a solid foundation on which to build a monitoring system which could be applied routinely to all programs.

I would greatly appreciate your permission to use this as soon as possible.

Sincerely,

Mary Wadden

Telephone (709) 758-7000
Facsimile (709) 758-7126

CCAF

CANADIAN COMPREHENSIVE AUDITING FOUNDATION

"The Carriageway"
55 Murray St., Suite 210
Ottawa, Ontario, Canada
K1N 5M3
Tel (613) 241-6713
Fax (613) 241-6791

December 5, 1994

Mary M. Wadden
Cabot College of Applied Arts, Technology
& Continuing Education

Facsimile (709) 758-7126

Dear Ms. Wadden,

In reply to your fax of December 1, 1994, in which you request permission to use the accountability framework published in "Reporting on Effectiveness in Colleges & Institutes" for your thesis project.

Please be advised that permission is granted for reproduction of the above for the noted purpose, with the stipulation that appropriate attribution of the source is provided.

Sincerely yours,

Suzanne Seebach
Director of Operations

Memorial
University of Newfoundland

Faculty of Education

March 22, 1995

To: Ms. Mary M. Wadden, c/o Dr. Dennis Mulcahy
From: Dr. Walter C. Okshevsky, Chair, Ethics Review Committee
Subject: Thesis proposal

==========

The Committee has completed its review of your thesis proposal entitled "A program monitoring model for Cabot College of Applied Arts, Technology, and Continuing Education." I am pleased to be able to advise you that your proposal has been approved.

Please find enclosed your Certificate of Approval.

On behalf of the Committee, I wish you the best of success in your study.

Sincerely,

Walter C. Okshevsky

WCO/encl.

Committee members: Drs. Seifert, Sharpe, Singh. Norris, Okshevsky

cc: Dr. Stephen Norris, Acting Associate Dean, Research and Development.

St. John's, Newfoundland, Canada A1B 3X8 • Telex 016-[illegible] • Fax [illegible]

FACULTY OF EDUCATION

Memorial University of Newfoundland

Faculty Committee for Ethical Review of Research Involving Human Subjects

Certificate of Approval

Investigator: Ms. Mary M. Wadden

Investigator's Workplace: Faculty of Education, MUN

Supervisor: Drs. D. Mulcahy & M. Kennedy

Title of Research: "A program monitoring model for Cabot College of Applied Arts & Technology"

Approval Date: March 22, 1995

The Ethics Review Committee has reviewed the protocol and procedures as described in this research proposal and we conclude that they conform to the University's guidelines for research involving human subjects.

Dr. Walter Okshevsky
Chairperson
Ethics Review Committee

Members: Dr. Walter Okshevsky
Dr. Tim Seifert
Dr. Dennis Sharpe
Dr. Amarjit Singh
Dr. ~~Patricia Canning~~ Stephen Norris

March 22, 1995

Mr. R. Chafe
Director of Programs and Academic Services
Cabot College of Applied Arts,
Technology and Continuing Education
Prince Philip Dr.
St. John's, NF

Dear Mr. Chafe,

As you are aware, I am presently involved in research for my Masters of Education at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr. Dennis Mulcahy.

You are also aware that my study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. You have given me the names of two programs that have volunteered to undergo the monitoring process. These are Early Childhood Education and Petroleum Engineering Technology. Monitoring these programs involves asking the students, instructors, program manager, graduates and employers of graduates of the program to complete questionnaires.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethics Review Committee. If you are willing for the College to take part in the study, please sign on the next page and return one copy with the questionnaire. The other is for you. The participation of the College is completely voluntary and you have the right to withdraw the College from it at any time. For your information, copies of the questionnaires that will be used are included with this letter.

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912. Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development, Memorial University of Newfoundland.

I would appreciate it if you could return a copy of the consent form to me by March 29, 1995.

Thank you very much for your consideration of this request, it is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for Mary Wadden to contact graduates, students, instructors, program managers and employers of our graduates of the Early Childhood Education and Petroleum Education Technology Programs. I understand the nature of the study and am willing for the College to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date

Director of Programs, Cabot
College of Applied Arts,
Technology and Continuing
Education

Engineering Technology Centre
Cabot College of Applied Arts,
Technology and Continuing Education

March 26, 1995

Dear Instructor,

I am an Academic Instructor at Cabot College of Applied Arts, Technology and Continuing Education. I am presently involved in research for my Masters of Education at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr. Dennis Mulcahy.

My study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. Two programs at the College have volunteered to undergo the monitoring process. These are Early Childhood Education and Petroleum Engineering Technology. Mr. Rod Chafe, Director of Programs has given me permission to contact the various stakeholders of these programs to find out how they perceive the programs.

Your participation will consist of completing the accompanying questionnaire which is one of a group to be completed by students, graduates, instructors, program managers and employers of our graduates. For your information, I have included with this letter a copy of the questionnaire I will be asking your students to complete. Completion of the questionnaire is completely voluntary. You may choose to omit any questions within the questionnaire.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethics Review Committee. If you are willing to take part in it please sign below and return one copy with the questionnaire. The other is for you.

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912. Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development, Memorial University of Newfoundland.

I would appreciate it if you could return this sheet and the questionnaire to me by April 6, 1995.

Thank you very much for your consideration of this request. It is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for the use of my completed questionnaire in the study of program monitoring at Cabot College being completed by Mary Wadden. I understand the nature of the study and am willing to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

March 26, 1995

Dear Manager of the _____ Program.

I am an Academic Instructor at Cabot College of Applied Arts, Technology and Continuing Education who is presently involved in research for my M. Ed. at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr. Denis Mulcahy.

My study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. Two programs at the College have volunteered to undergo the monitoring process. These are the Early Childhood Education and Petroleum Engineering Technology. Mr. Rod Chafe, Director of Programs has given me permission to contact the various stakeholders of these programs to find out how they perceive the programs

Your participation will consist of filling out the accompanying questionnaire which is one of a group to be completed by students, graduates, instructors, program managers and employers. For your information, I have included copies of the questionnaires I will be asking the instructors and students in your program to complete. Completion of the questionnaire is completely voluntary. You may choose to omit any question within the questionnaire.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethic Review Committee. If you are willing to take part in this study please sign below and return one copy with the questionnaire. The other is for you

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912. Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development.

I would appreciate it if you could return the form and the questionnaire to me by April 4, 1995.

Thank you very much for your cooperation. It is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for the use of my completed questionnaire in the study of program monitoring at Cabot College being completed by Mary Wadden. All information is strictly confidential and no individual will be identified.

_____ _____ _____

Date Signature

Engineering Technology Centre
Cabot College of Applied Arts,
Technology and Continuing Education

March 26, 1995

Dear Student,

I am an Academic Instructor at Cabot College of Applied Arts, Technology and Continuing Education. I am presently involved in research for my Masters of Education at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr. Denis Mulcahy.

My study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. Two programs at the College have volunteered to undergo the monitoring process. These are Early Childhood Education and Petroleum Engineering Technology. Mr Rod Chafe, Director of Programs has given me permission to contact the various stakeholders of these programs to find out how they perceive the programs.

Your participation will consist of filling out the accompanying questionnaire which is one of a group to be completed by students, graduates, instructors, program managers and employers of our graduates. It may be returned in the stamped, addressed envelope provided. Completion of the questionnaire is completely voluntary. You may choose to omit any questions within the questionnaire.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethics Review Committee. If you are willing to take part in it please sign below and return one copy with the questionnaire. The other is for you.

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912. Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development, Memorial University of Newfoundland.

Thank you very much for your consideration of this request, it is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for the use of my completed questionnaire in the study of program monitoring at Cabot College being completed by Mary Wadden. I understand the nature of the study and am willing to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

Engineering Technology Centre
Cabot College of Applied Arts,
Technology and Continuing Education

March 26, 1995

Dear Graduate of the _____ Program.

I am an Academic Instructor at Cabot College of Applied Arts, Technology and Continuing Education. I am presently involved in research for my Masters of Education at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr. Denis Mulcahy.

My study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. Two programs at the College have volunteered to undergo the monitoring process. These are Early Childhood Education and Petroleum Engineering Technology. Mr Rod Chafe, Director of Programs has given me permission to contact the various stakeholders of these programs to find out how they perceive the programs.

You participation will consist of filling out the accompanying questionnaire which is one of a group to be completed by students, graduates, instructors, program managers and employers of our graduates. It may be returned in the stamped, addressed envelope provided.

So that my data is complete, I need to contact your employer and have your employer complete a questionnaire concerning how the program prepared you for the workplace. For your information, I have included with this letter a copy of the survey I would be sending your employer. If you are willing for me to contact your employer please indicate this on the next page. Both completion of the questionnaire and contact with your employer are completely voluntary. You may choose to omit any questions within the questionnaire. You may also choose to complete the questionnaire and return it without permission to contact your employer.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethics Review Committee. If you are willing to take part in it please sign on the next page and return one copy with the questionnaire. The other is for you

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912 Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development, Memorial University of Newfoundland.

I would appreciate it if you could return these pages with the questionnaire to me by April 15, 1995.

Thank you very much for your consideration of this request, it is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for the use of my completed questionnaire in the study of program monitoring at Cabot College being completed by Mary Wadden. I understand the nature of the study and am willing to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

I _____ give my permission to contact my employer to obtain my employer's opinions on the program of studies I completed at Cabot College.

_____ _____

Date Signature

Name of Employer: _____

Address of Employer: _____

_____

_____

Phone Number: _____

Engineering Technology Centre
Cabot College of Applied Arts,
Technology and Continuing Education

April _, 1995

Dear Employer of Graduate (s) of the _____ Program.

I am an Academic Instructor at Cabot College of Applied Arts, Technology and Continuing Education. I am presently involved in research for my Masters of Education at Memorial University of Newfoundland. My supervisors are Dr. Mary Kennedy and Dr Dennis Mulcahy.

My study involves developing a program monitoring model for all programs at Cabot College. Program monitoring is intended to identify programs that need an in-depth program review. Two programs at the College have volunteered to undergo the monitoring process. These are Early Childhood Education and Petroleum Engineering Technology. Mr Rod Chafe, Director of Programs has given me permission to contact the various stakeholders of these programs to find out how they perceive the programs. Your employee has also given me permission to contact you.

Your participation will consist of filling out the accompanying questionnaire which is one of a group to be completed by students, graduates, instructors, program managers and employers of our graduates. Completion of the questionnaire is completely voluntary. You may choose to omit any questions within the questionnaire.

All information gathered in this study is strictly confidential and at no time will individuals be identified. This study has received approval of the Faculty of Education's Ethics Review Committee. If you are willing to take part in it please sign below and return one copy with the questionnaire. The other is for you.

Following completion of the study, a summary of the results will be available upon request to all participants. If at any time you have any inquiries about the research, please feel free to contact me at 754-2912. Should you wish to speak with a resource person not associated with the study, please contact Dr. Stephen Norris, Acting Associate Dean, Research and Development, Memorial University of Newfoundland.

I would appreciate it if you could return this sheet and the questionnaire to me in the stamped, addressed envelope provided by _____

Thank you very much for your consideration of this request, it is greatly appreciated.

Sincerely,

Mary Wadden

I _____ hereby give permission for the use of my completed questionnaire in the study of program monitoring at Cabot College being completed by Mary Wadden. I understand the nature of the study and am willing to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

I _____ hereby give permission for Mary Wadden to contact graduates, students, instructors, program managers and employers of our graduates of the Early Childhood Education and Petroleum Education Technology Programs. I understand the nature of the study and am willing for the College to participate. All information is strictly confidential and no individual will be identified.

_____ _____

Date

Director of Programs, Cabot College of Applied Arts, Technology and Continuing Education

Appendix B
Instruments

Survey to Determine Information and Indicators to be Included in Annual Program Monitoring

Please identify which of the following classifications apply to you. Please check more than one if necessary.

Representative of the Department of Education

Representative of Employers

Administration

Instructor

Student

Member of the Academic Management Committee

Member of the Board of Directors

Member of the Program Review Committee

Member of the Total Quality Council

Other (Please specify) _____

Directions:

Seven questions are being used as a framework to report on program performance.

Each question is stated and following it you will find information that might be used to analyse and understand performance for the question.

Please respond to the information below each question on a scale from 1 to 5 where 1 indicates you feel the information is Unimportant (UI) and 5 indicates you feel the information is Extremely Important (EI).

For each question, space is also provided for you to make suggestions for further information that might be collected and for you to make comments.

Question 1. Does the program meet the needs of the community?

Please mark which indicators you consider important or unimportant in finding answers to Question 1, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 1:		UI				EI
5.	Local labour market trends such as current/forecast levels of unemployment.	1	2	3	4	5
6.	Trends in demand occupations.	1	2	3	4	5
7.	Trends in critical skill shortages.	1	2	3	4	5
8.	Trends in skill development requirements.	1	2	3	4	5
9.	Trends in student enrolment.	1	2	3	4	5
10.	Trends in achievement.	1	2	3	4	5
11.	Trends in retention.	1	2	3	4	5
12.	Data on levels of satisfaction in community groups.	1	2	3	4	5
13.	Data on levels of satisfaction in employers.	1	2	3	4	5
14.	Program availability elsewhere.	1	2	3	4	5

Indicators re question 1:	UI				EI
15. Data on levels of satisfaction in students.	1	2	3	4	5
16. Data on levels of satisfaction in transfer institutions.	1	2	3	4	5

Other information, indicators or comments:

Question 2.	Does the institution attract and keep an appropriate number and mix of students in this program?

Please mark which indicators you consider important or unimportant in finding answers to Question 2, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 3:		UI				EI
1	Enrollment patterns of male versus female.	1	2	3	4	5
2	Numbers of applicants.	1	2	3	4	5
3	Percentage capacity achieved.	1	2	3	4	5
4	Trends in retention.	1	2	3	4	5

Other information, indicators or comments:

_____

_____

_____

_____

_____

Question 3. Do students in this program achieve appropriate outcomes?

Please mark which indicators you consider important or unimportant in finding answers to Question 3, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 3:		UI				EI
1	Data on total numbers of students completing programs.	1	2	3	4	5
2	Data on numbers of males versus females completing programs.	1	2	3	4	5
3	Data on attainment of all students completing programs.	1	2	3	4	5
4	Data on attainment of males versus females of those students completing programs.	1	2	3	4	5
5	Data on receipt of accreditation, passing licence examinations etc.	1	2	3	4	5
6	Data on impact on income.	1	2	3	4	5
7	Data on impact on employability.	1	2	3	4	5

Indicators re question 3:		UI				EI
8	Data on levels of satisfaction with respect to the adequacy and post-study utility for students.	1	2	3	4	5
9	Data on levels of satisfaction with respect to the adequacy and post-study utility for instructors.	1	2	3	4	5
10	Data on levels of satisfaction with respect to the adequacy and post-study utility for employers.	1	2	3	4	5

Other information, indicators or comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Question 4.	Does the institution obtain, organize and administer resources so that the above outcomes are achieved at a reasonable cost for this program?

Please mark which indicators you consider important or unimportant in finding answers to Question 4, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 4:		UI				EI
1	Resources allocated to program.	1	2	3	4	5
2	Number, nature and mix of teaching, teaching support, operational and administrative staff.	1	2	3	4	5
3	Nature and amount of facilities and equipment.	1	2	3	4	5
4	Student-instructor ratios.	1	2	3	4	5
5	Ratio of resources dedicated to the learning process to the resources allocated for general operations.	1	2	3	4	5
6	Time spent on learning process by instructors as opposed to administrative time.	1	2	3	4	5

Indicators re question 4:		UI				EI
7	Utilization of facilities (at, above or below capacity).	1	2	3	4	5
8	Adequate access for students of facilities.	1	2	3	4	5
9	Adequate access for students of equipment.	1	2	3	4	5
10	Adequate access for students of services.	1	2	3	4	5
11	Adequate access for students of instructors.	1	2	3	4	5

Other information, indicators or comments:

Question 5.	In the area of this program, is the College maintaining and building its intellectual and physical resources, including quality of its employees, curriculum, and physical plant?

Please mark which indicators you consider important or unimportant in finding answers to Question 5, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 5:		UI				EI
12	Measure of professional development of instructional staff.	1	2	3	4	5
13	Provision of a positive working environment.	1	2	3	4	5
14	Provision of up-to-date curriculum.	1	2	3	4	5
15	Provision of current teaching aids of high standard.	1	2	3	4	5
16	General condition of physical resources.	1	2	3	4	5

Other information, indicators or comments:

_____

_____

_____

Question 6.	Does the institution have systems that produce information that enables management to answer these questions?

Please mark which indicators you consider important or unimportant in finding answers to Question 6, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

	Indicators re question 6:	UI				EI
1	Are there open channels of information from instructional and support staff to management?	1	2	3	4	5
2	Are there open channels of information from instructional staff to students?	1	2	3	4	5
3	Is there regular transfer of information from management to instructional and support staff?	1	2	3	4	5
4	Is there regular transfer of information from students to instructional staff?	1	2	3	4	5
5	Is there opportunity for students to discuss issues with College management?	1	2	3	4	5

Other information, indicators or comments:

Question 7. Does the program match the College mission statement and objectives?

Please mark which indicators you consider important or unimportant in finding answers to Question 7, on a scale of 1 (unimportant, UI) to 5 (extremely important EI).

Indicators re question 7:	UI				EI
The goals and objectives for the program.	1	2	3	4	5
College mission statement and objectives.	1	2	3	4	5

Other information, indicators or comments:

_____

_____

_____

_____

_____

_____

_____

_____

Interview Guide

Participant's Name:

_____

Participant's Position:

_____

Date:

_____

This interview serves a dual purpose. The first is to gain the information needed for the program monitoring. Secondly, it will be used to complete the research for a course in qualitative research.

You are aware that I have been conducting a survey to determine what information and indicators should be included in annual program monitoring. A preliminary set of results have been generated using the statistics package SPSS. Some of the information and indicators can be measured by surveys of program managers, graduates, instructors and students. For example: resources allocated to the program and levels of satisfaction.

Several other areas are more difficult to define and determine how to measure. Today I would like to explore these areas, to get a sense of what they mean to you and find out how you feel they should be measured.

When the interviewing is complete I would like to send back to you a copy of the discussion we've had. This would give you an opportunity to correct any errors, and also make any further comments.

Although the results of these interviews will be used to develop measuring devices for the program monitoring, the results of the individual interviews will remain confidential.

1. a. What do you understand by the words professional development as they apply to instructors in College programs?

b. What are the different types of professional development?

c. How frequently should these activities be/are taking place?

d. How can we find out if instructors are involved in professional development activities?

2. a. What comes to mind with the terms *up to date curriculum*?

i. Do teaching aids fit in here?

ii. What kinds of teaching aids?

b. Who judges if the curriculum in a program is up-to-date?

c. What would be ways that a program can assure it has an up-to-date curriculum?

3. a. What kinds of information must be transferred from management to instructors to ensure that the program acheives the quality outcomes.

b. What kinds of information must be transferred from instructors to management?

c. What are the essential ways of assessing that open channels of information exist between instructors and management?

4. What kinds of information must be transferred from students to instructors?

e. What are the essential ways of assessing this to occur?

f. What kinds of information must be transferred from instructors to students?

q. What are the essential ways of assessing this is occurring?

Instructor Questionnaire

Please check one of the following

☐ Instructor in Program	☐ Instructor in Related Subjects (e.g. math, communications etc.)	☐ Field Instructors / Demonstrators

The following questions refer to the program Early Childhood Education. Please answer by circling Yes (Y), No (N), Don't Know (D/K) or (N/A) if the statement is Not Applicable.

Numbers to the left are for coding purposes. Please disregard

1-1	Do you think this program provides a good student learning environment?	Y	N	D/K	N/A
1-2	Are all students in the program treated equally?	Y	N	D/K	N/A
1-3	Do you think that the support services of the college are responsive to the needs of students in this program? (Support services include Registrar's office, health, recreation, counselling, library and audiovisual services.)	Y	N	D/K	N/A
1-4	Does the program foster a positive work ethic in its students?	Y	N	D/K	N/A
1-5	Would you describe the atmosphere in the program as cooperative and respectful?	Y	N	D/K	N/A
1-6	Are the teaching aids (equipment, models, computer resources etc.) current?	Y	N	D/K	N/A
2-1	Do the program's graduates have the communications skills necessary for their place in the workplace?	Y	N	D/K	N/A
2-2	Does the program foster good teamwork skills in students?	Y	N	D/K	N/A
2-3	Do you feel that the knowledge and skills of the program's graduates are up-to-date for the workplace?	Y	N	D/K	N/A
4-1	Do you think that this program effectively and efficiently uses resources?	Y	N	D/K	N/A
7-1	Do you use instructor evaluation forms with your students in the courses you teach?	Y	N	D/K	N/A

7-2	Do you use course evaluation forms with your students at the end of each course?	Y	N	D/K	N/A
7-3	In the last year have you taken part in any courses, seminars, workshops etc totalling six hours or more related to delivery of instruction?	Y	N	D/K	N/A
7-4	In the last year have you taken part in any courses, seminars, workshops etc, totalling six hours or more related to the areas of your instruction?	Y	N	D/K	N/A
7-5	In the last year, have you read (on a regular basis) any journals related to your areas of instruction?	Y	N	D/K	N/A
7-6	In the last year, have you been involved with developing presentations, curriculum committees, program reviews, volunteer organizations, provincial or national committees related to your areas of instruction?	Y	N	D/K	N/A
7-7	Does the program manager meet with the instructors in the program to discuss its goals and objectives?	Y	N	D/K	N/A
7-8	Is the program manager aware of the needs of the program?	Y	N	D/K	N/A
7-9	Does you manager meet with you to discuss the results of your instructor evaluations?	Y	N	D/K	N/A
7-10	Does your manager keep you aware of any planned changes to the program?	Y	N	D/K	N/A
7-11	Have the goals and objectives of any of the courses you teach been revised in the last three years?	Y	N	D/K	N/A

Space is provided below for any comments you wish to make about any of the above questions or any other comments about the program (e.g. are there any areas of the program that need improvement?)

Comments:

_____

_____

Program Manager Questionnaire

For the past fiscal year the financial resources allocated to this program were

The total number of students enrolled in the program are: _____

Please answer the following by Yes (Y), No (N), Don't Know (D/K) or (N/A) if the statement is Not Applicable.

Numbers to the left are for coding purposes. Please disregard

1-1	Do you think this program provides a good student learning environment?	Y	N	D/K	N/A
1-2	Are all students in the program treated equally?	Y	N	D/K	N/A
1-3	Do you think that the support services of the college are responsive to the needs of the students in your program? (Support services include Registrar's office, health, recreation, counselling, library and audiovisual services.)	Y	N	D/K	N/A
1-4	Does the program foster a positive work ethic in its students?	Y	N	D/K	N/A
1-5	Would you describe the atmosphere in the program as cooperative and respectful?	Y	N	D/K	N/A
1-6	Are the teaching aids (equipment, models, computer resources etc.) current?	Y	N	D/K	N/A
2-1	Does the program emphasize the communications skills necessary for the workplace?	Y	N	D/K	N/A
2-2	Does the program foster good teamwork skills in students?	Y	N	D/K	N/A
2-3	Do you feel that the knowledge and skills of the program's graduates are up-to-date for the workplace?	Y	N	D/K	N/A
4-1	Do you think that this program effectively and efficiently uses resources?	Y	N	D/K	N/A

5-1	Does this program have a Total Quality Team?	Y	N	D/K	N/A
5-2	Does this the program have a cooperative or a job-placement aspect with feedback from employers about the program.	Y	N	D/K	N/A
5-3	Has the Program Advisory Committee met in the last twelve months?	Y	N	D/K	N/A
5-4	Has the program been reviewed in the last three years?	Y	N	D/K	N/A
5-5	Has the program received accreditation in the last five years?	Y	N	D/K	N/A

Space is provided below for any comments you wish to make about any of the above questions or any other comments about the program (e.g. are there any areas of the program that need improvement?)

Comments:

_____

_____

_____

Student Questionnaire

The following questions refer to the program in which you are currently enrolled. Please answer by circling Yes (Y), No (N), Don't Know (D/K) or (N/A) if the statement is Not Applicable .

Numbers to the left are for coding purposes Please disregard

1-1	Do you think this program provides a good student learning environment?	Y	N	D/K	N/A
1-2	Are all students treated equally?	Y	N	D/K	N/A
1-3	Do you think that the support services of the college are responsive to your needs ? (Support services include Registrar's office, health, recreation, counselling, library and audiovisual services)	Y	N	D/K	N/A
1-4	Does the program foster a positive work ethic (i e. an interest in and willingness to work) in its students?	Y	N	D/K	N/A
1-5	Would you describe the atmosphere in the program as cooperative and respectful?	Y	N	D/K	N/A
1-6	Are the teaching aids (equipment, models, computer resources etc) current?	Y	N	D/K	N/A
3-1	Is the teaching in the program motivating and innovative?	Y	N	D/K	N/A
3-2	Are the instructors in the program knowledgeable in their fields?	Y	N	D/K	N/A
3-3	Are alternate forms of evaluation such as group projects or oral reports used in your program?	Y	N	D/K	N/A
3-4	Are you provided with course outlines including the objectives for the courses in your program	Y	N	D/K	N/A
3-5	At the beginning of your courses, are you usually provided with a written evaluation scheme?	Y	N	D/K	N/A

3-6	Do you feel comfortable discussing problems with course content with your instructors?	Y	N	DK	N/A
3-7	Do you feel comfortable discussing problems with teaching methods (delivery of instruction) with your instructors?	Y	N	DK	N/A

Are there any comments you wish to make about any of the questions above or any other aspect of the program?

Comments:

_____

_____

_____

_____

_____

_____

Graduate Questionnaire

Numbers to the left are for coding purposes. Please disregard

Please circle the response that applies to you.

At the present time I am

6-1	employed in my field	employed in a related field	employed in an unrelated field.	unemployed

The following questions refer to the program you completed at Cabot College. Please answer by circling Yes (Y), No (N), Don't Know (D/K) or (N/A) if the statement is Not Applicable .

1-1	Do you think the program provided a good student learning environment?	Y	N	D/K	N/A
1-2	Were all students treated equally?	Y	N	D/K	N/A
1-3	Do you think that the support services of the college were responsive to your needs when you were in your program? (Support services include Registrar's office, health, recreation, counselling, library and audiovisual services)	Y	N	D/K	N/A
1-4	Did the program foster a positive work ethic in its students?	Y	N	D/K	N/A
1-5	In the program, would you describe the atmosphere as cooperative and respectful?	Y	N	D/K	N/A
1-6	Were the teaching aids (equipment, models, computer resources etc.) current?	Y	N	D/K	N/A
2-1	Do you feel you have the communications skills (oral and written) necessary for your workplace?	Y	N	D/K	N/A
2-2	Did the program foster good teamwork skills in students?	Y	N	D/K	N/A
2-3	Do you feel that the knowledge and skills you obtained are up-to-date for the workplace?	Y	N	D/K	N/A

3-1	Was the teaching in the program motivating and innovative?	Y	N	D/K	N/A
3-2	Were the instructors in the program knowledgeable in their fields?	Y	N	D/K	N/A
3-3	Were alternate forms of evaluation such as group projects or oral reports used in your program?	Y	N	D/K	N/A
3-4	Were you provided with course outlines including the objectives for the courses in your program?	Y	N	D/K	N/A
3-5	At the beginning of your courses, were you usually provided with a written evaluation scheme?	Y	N	D/K	N/A
3-6	Did you feel comfortable discussing problems with course content with your instructors?	Y	N	D/K	N/A
3-7	Did you feel comfortable discussing problems with teaching methods (delivery of instruction) with your instructors?	Y	N	D/K	N/A
8-1	Are you satisfied with the preparation for the workplace provided by the program?	Y	N	D/K	N/A

Are there any comments you wish to make about how well you were prepared for the workplace? Are there any specific areas in which you feel you are missing knowledge or skills?

Comments.

_____

_____

_____

Program Code

Employer Questionnaire

We understand that you have one or more 1994 graduates of the program___ _____ employed with your company. The purpose of the questionnaire is to help Cabot College monitor and improve its instructional programs by determining how well the program they completed at Cabot College prepared them for the workplace.

Based on your experience of supervising this Cabot College graduate, for each question below, please indicate your answer by circling Yes (Y), No (N), Don't know (D/K) or if the statement is Not Applicable (N/A).

Numbers to the left are for coding purposes. Please disregard.

1-1	Does this program's graduate(s) have a positive work ethic?	Y	N	D/K	N/A
2-1	Does this program's graduate(s) have the communications skills necessary for his/her place in your workplace?	Y	N	D/K	N/A
2-2	Does this program's graduates have good teamwork skills?	Y	N	D/K	N/A
2-3	Is the knowledge and skills of this program's graduate(s) up-to-date for the workplace?	Y	N	D/K	N/A
8-1	Are you satisfied with the preparation of this (these) graduate(s) for the work place?	Y	N	D/K	N/A

Are there any comments you wish to make about the preparedness of this graduate for your workplace? Are there any specific areas in which he/she is missing knowledge or skills?

Comments

_____

_____

_____

_____

Appendix C

Program Monitoring Functions and Indicators Used in Selected Colleges

Delaware County Community College (Heverly, 1989)	
Function of Monitoring	1 To identify program for closer scrutiny 2 Identify features of a program which should be targeted for closer study
Indicators	<u>Market Demand</u> 1 Student demand 2 Employer demand 3 Demand from transfer institutions <u>Resources</u> 4 Students' entry skills 5 Faculty/staff availability and expertise 6 Space, equipment, supplies, operating budget 7 College facilities and services <u>Processes</u> 8 Applications/ enrollments 9 Academic progress and performance 10 Full time/ part time faculty ratios 11 Student satisfaction 12 Retention, withdrawals, changes of major <u>Outcomes</u> 13 Graduation, placement, employment, transfer rates 14 Achievement of competencies 15 Salaries 16 Transferability 17 Satisfaction of students, employers and transfer institutions

Eastern Iowa Community College (Friedel, 1989)		
Function of Monitoring	1	To identify well being of program and provide a gauge for indicating the need for program revision
	2	To measure the success of the program and to ascertain program costs
	3	To provide a "snapshot" view of the program viability
Indicators.	1.	Enrollment/ headcount
	2	Contact hours generated by the program
	3.	Program graduate/ completion rates
	4	FTE generated by program
	5	Program leavers and withdrawal
	6	Program major's intent
	7	Program cost
	8	Average class size
	9	Success of program leavers
	10	Advisory committee meetings' and department meetings' highlight

Mt Hood Community College (Kreider, Walleri and Gratton, 1993)	
Function of Monitoring	1 To determine programs developing problems for a further in-depth review
Indicators	1 Student demand
	2 Job placement and transfer success
	3 Employment outlook
	4 Instructional cost effectiveness
	5 Facility requirements
	6 Equipment/ supplies requirements
	7 Revenue projections
	8 Course retention
	9 Student success by course
	10 Retention in sequential courses
	11 Discipline/ program retention
	12 Completion
	13 Staff development
	14 Quality of the curriculum
	15 Service to students from other disciplines
	16 Instructional alternatives within the college
	17 Instructional alternatives at other institutions
	18 Comprehensiveness/ balance in instructional offerings
	19 Service to the community

Florida Community College (1989)	
Function of Monitoring	1 To identify program for closer scrutiny 2. Identify features of a program which should be targeted for closer study
Indicators:	Enrollment data: 1 Total class sections 2. Average section size 3. Total Full Time Enrollment (FTE) Faculty workload data: 4. Full-time faculty headcount (FTFH) 5. Part-time faculty head count (PTFH) 6. Full-time equivalent faculty (FTEH) 7. FTES per FTEF Cost data: 8 Instructional cost per FTE Enrollment data 9. Unduplicated headcount enrollment Completion data: 10 Program graduates/ completers Placement data 11 Student placement rate

Milwaukee Technical College (Roberts, 1986)		
Function of Monitoring	1	To determine if any program requires an in-depth evaluation or requires special attention
Indicators	1	Enrollment rate
	2	Graduation rate
	3	Graduate placement
	4	Employer requests
	5	Cost per FTE
	6	Faculty productivity
	7	Relationship to college mission
	8	Number of female, minority and handicapped enrolled

New Brunswick Department of Education (1992)	
Function of Monitoring	1 Indicate poorly performing programs to assist in determining seat allocation
Indicators	1 Demand 2. Enrolment/Capacity 3 Output 4 Employment Rate 5 % Related Employment

Appendix D

Organizational Structure
and
Programs
at
Cabot College of Applied Arts, Technology and Continuing Education

Figure 13 Organizational Chart of Academic Management Positions for Cabot College of Applied Arts, Technology and Continuing Education in January, 1995

Full-Time Programs at Cabot College

Faculty of Business

Business Management *(Accounting)*

Business Management *(Marketing)*

Business Administration Certificate

Computer Applications/Operations

Office Admistration

Faculty of Community Education and Applied Arts

Adult Basic Education (ABE)

Community Recreation Leadership

Early Childhood Education

Garment Construction and Design

Graphic Arts

Textile Studies

Faculty of Engineering

Appraisal Assessment Technology

Architural Engineering Technology

Automotive Technology

Bricklaying

Carpentry

Civil Engineering Technology

Computer Studies (MIS)

(Co-op)

Cooking *(Commercial)*

Electrical Engineering Technology

(Non Co-op)

Electrical Engineering Technology

(Power Distribution Co-op)

Electrical Power Utilities

Electronics Engineering Technician

Faculty of Engineering (cont'd)

Electronics Engineering Technology

Electronics Engineering Technology

(Biomedical)

Electronics Engineering Technology

(Communications)

Faculty of Engineering (cont'd)

Electronics Engineering Technology *(Computers)*

Industrial Engineering Technology (Co-op)

Industrial Instrumentation

Hairstylist

Industrial and Construction Electrical *(Basic)*

Machinist

Marine Cooking

Mechanical Engineering Technology *(HVAC)*

Mechanical Engineering Technology *(Power Engineering)*

Millwright/Industrial Mechanic

Motor Vehicle Repair *(Body)*

Motor Vehicle Repair *(Mechanical)*

Oil Burner Mechanic

Petroleum Engineering Technology

Plumbing

Power Engineering

Faculty of Engineering (cont'd)

Refrigeration Plant Operation

Safety Engineering

Sheet Metal

Surveying Engineering Technology *(Co-op)*

Welding

Faculty of Medical Sciences

Cytology

Diagnostic Ultrasonography

Food Administration

Medical Laboratory Sciences

Medical Radiography

Faculty of Medical Sciences (cont'd)

Nursing Assistant

Respiratory Therap

Appendix E

Tasks, Methods And Administration Of

An Evaluation

(Stufflebeam et al, 1971, pp 156 - 213)

1. Delineation of Information Needs
   - 1.1 Definition of the System
     - 1.1.1 Set system boundaries
     - 1.1.2 Define the elements of the system
     - 1.1.3 Define the characteristics of system elements
   - 1.2 Specification of Decisions
     - 1.2.1 Describe antecedents
     - 1.2.2 State Decisions Setting
       - 1.2.2.1 State decision authority
       - 1.2.2.2 State decision responsibility
       - 1.2.2.3 State decision influencers
       - 1.2.2.4 State clientele for information
       - 1.2.2.5 State decision timing
       - 1.2.2.6 Summarize decision questions
     - 1.2.3 Establish Criterion Variables
       - 1.2.3.1 State questions to be answered
       - 1.2.3.2 State alternative answers to questions
       - 1.2.3.3 State alternative actions
     - 1.2.4 State Decision Rules
       - 1.2.4.1 Set single variable decision rules
       - 1.2.4.2 Set multiple variable decision rules
     - 1.2.5 Identify Available Evidence
   - 1.3 Statement of Evaluation Policies
     - 1.3.1 State access to data sources
     - 1.3.2 State access to database and evaluative information
     - 1.3.3 State role of evaluation authority and responsibility
     - 1.3.4 State budget and resource limitations for evaluation
     - 1.3.5 State scheduling limitations

1 3 6 State reporting policies

1 4 Statement of Evaluative Assumptions

1 4 1 State Sampling Assumptions

1.4.2 State Treatment Assumptions

1 4.3 State Measurement Assumptions

1 4 4 State Analysis Assumptions

1.4.5 Model the Evaluation Design

2 Plan for Obtaining Information

2.1 Collection of Data

2.1.1 State information source (sample)

2 1 1.1 Establish sample size

2 1 1.2 State sampling procedures

2.1.1 3 Establish population

2.1.2 State instrumentation

2 1 2 1 Match items to criterion variables

2 1.2.2 Describe instrument type

2.1 2 3 Specify items of information

2.1 3 Describe collection conditions

2.1 3.1 Establish responsibility for instrument administration

2 1.3.2 Schedule instrument administration

2.1.3 3 Establish setting for administration

2 2 Plan for Obtaining Information

2 2.1 Unit of Organization

2 2 1.1 State unit of organization

2.2 1.2 Establish level of disaggregation required

2 2 1.3 Set scoring or coding format

2.2.2 Establish Storage and Retrieval Requirements

2.2.2 1 Establish coding formats for storage

2 2.2.2 Document storage procedures

2.2.2.3 Specify storage and retrieval facilities

2.2.2.4 Specify retrieval procedures

2.2.3 Establish Quality Control Procedures

2.2.3.1 Establish editing procedures

2.2.3.2 Provide error checks

2.2.3.3 Establish audit trail design

2.3 Analysis of Data

2.3.1 State unit of analysis

2.3.2 State analysis method

2.3.3 State analysis facility

3. Plan for Providing Information

3.1 Preparation of Reports

3.1.1 Definition of Report Audience (s)

3.1.2 Depiction of Reporting Levels

3.1.2.1 Micro level Reports

3.1.2.2 Macro level Reports

3.1.3 Description of Reporting Mode

3.1.3.1 Establish Reporting Setting

3.1.3.2 Establish Report Content

3.1.3.3 Establish Reporting Media

3.1.4 Establish Reporting Schedule

3.2 Dissemination of Reports

3.2.1 State procedure for transmission of reports

3.2.2 State procedure for publication of reports

4. Evaluation of the Evaluation