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Needs Assessment of the "Referent Partners" in the Planning of a College Professional Program in Photography.

Elizabeth S. Charles

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Abstract

Needs Assessment of the "Referent Partners" in the Planning of a College Professional Program in Photography.

Elizabeth S. Charles

The aim of this thesis was to employ the planning tool of needs assessment (the Kaufman model) to establish the discrepancies between what the "referent" externals believe should be the output of a system and what the current internals expect from the system.

The Professional Photography Program in the Career Sector of Dawson College was selected for this study. The information was gathered from a stratified random sample of 52 external partners (members of the photography community in Montreal, Quebec) and 62 internal partners (students in the regular college program and the continuing education program). The written surveys distributed to these samples provided the perceptual needs-sensing data, while institutional records and government reports provided the "hard" data or validating evidence.

The "referent" externals were found to overwhelmingly support general education, while the internal sample did not. The importance placed upon vocational job training by the external reference group was an unanticipated disclosure. Finally, the results of the "referent" internals' curriculum concerns were consistent with the findings of the government agency, Conseil des Collèges, who also conducted research on this subject. The identification of recognized needs and suggestions for planned interventions are included. Recommendations for additional studies include using the "outside-in" needs assessment model to take a further look at the needs of the end users of photography: newspapers, magazines, advertising agencies, and so forth.

Acknowledgements

I wish to thank Don Walker, the director of the Dawson Institute of Photography and my friend, for his permission to conduct the research and use the facilities. I would like to express my gratitude towards Ursula Mueller-Judson for translating the survey instrument and Roger Azevedo who assisted me with the running of the data analysis. Finally it is hard to find words to thank my advisor, Dr. Gary Coldevin for his much appreciated support and advice when all seemed the most hopeless.

My greatest thanks goes to my husband, Lorne Woods, for his unshakeable confidence and enthusiatic readings of all fifty drafts.

Dedication

To my loving family,

Lorne, Leslie, Lindsay, and My Mom.

And Dad across the miles.

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CHAPTER 1

Introduction, Historical Background and Purpose of Thesis

In today's rapidly changing economic and technological environment, educational institutions are facing many key issues. One of the most urgent is program validity. Hence, it is important to evaluate and plan for the evolving demands of the marketplace. Of particular interest to this author are professional programs in the Career sector of Quebec's colleges.

The Ministry of Education and consequently the college system are faced with difficult decisions: which program revisions should be funded; which programs should be maintained; and where could budgets be reduced. The question remains as to whether colleges should take a rigorous look at their programs and fund only those that are profitable?

In times of budgetary restraint the most vulnerable areas are educational programs that operate with high financial demands, caps on enrollments and small numbers of graduates. These descriptions are common to many professional programs. Benjamin (1989) writes that the "increased pressure for accountability in the midst of shrinking financial resources has created great interest in getting the most bang for each dollar" (p. 12). What is needed is a planning tool that provides the ammunition for that "bang".

Needs Assessment is the educational management model which allows institutions to discover where they are heading. This approach permits users to study the system at any one of the results levels, to identify the discrepancies between the existing results and desired ones, and finally to define new objectives consistent with closing these gaps.

The Kaufman "system approach" (1988) is a departure from the traditional models that propose solutions based on enrollment and funding figures. It looks at the system's impact on its environment and because of this holistic strength, it is the planning tool selected by the author of this study. Mayer (1983) agrees that "the system approach has value in that it directs the user to the correct identification of problems, not just the present symptoms, prior to deciding about solutions" (p. 21). One must thus identify the gap between the existing outcomes and the desired outcomes (the need) and establish what it will cost (economically, socially, politically) to close the gap (Kaufman, 1987). Confirming the effectiveness of this approach is Butz (1983) who believes that "it is the assessment of outcomes which has the greatest potency for ensuring institutional relevancy and is the 'sine qua non' for real institutional renewal" (p. 28).

Historical Background

The Parent Report of 1966 created the present system of post-secondary education in Quebec, the "Collège d'enseignement général et professionnel" (hereafter referred to as, the Cegep). The Cegep was a dramatic break from the "Collèges Classiques" and the technological institutes that offered a limited selection of programs and generally operated by pastoral teaching professionals. The main objective of the Parent Report was to democratize non-obligatory education in Quebec, thus making way for substantial political and social changes to the average household in the province:

> Les étudiants d'un même établissement forment une véritable société et ils ont en commun des intérêts et des préoccupations, par suite de leur état de vie; ils constituent une communauté qui doit se

> reconnaître et s'organiser. Cette expression suggère donc l'idée que les étudiants forment une société qui a besoin de se donner des structures et des services. Rapport de la Commission royale d'enquête sur l'inseignement dans la province de Québec, (Québec,1966, p. 241).

Dawson College opened its doors in 1969. Today, it is the largest Cegep in Quebec. Its enrollment peaked in 1984 with 7550 full time regular day students and 2500 adult education students. Due to the adjusting demographics of the society (negative birthrate, emigration of English Quebecers, etc.) the current figures (Fall, 1990) have declined to 6,730 regular day students (see Appendix A). It is interesting to note that all other anglophone and francophone educational institutions are experiencing similar diminishing enrollments.

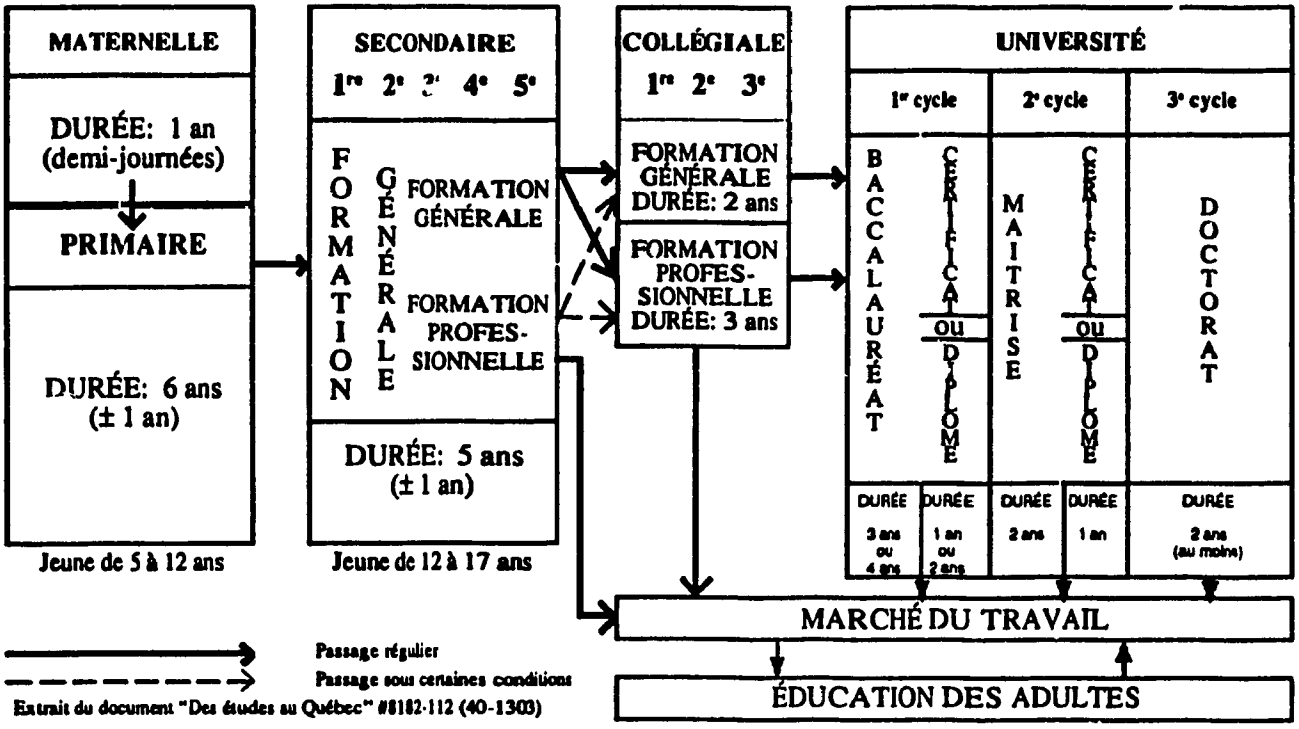
Dawson College was founded on hopes of a proud heritage of social responsibility and accessibility to education. The majority of its students are drawn from local high schools. Due to its downtown campuses and large selection of career programs, it nonetheless attracts substantive numbers of older students: those seeking retraining, those returning to the work-force, and recent immigrants seeking new beginnings.

Within the college there are pre-university and professional programs. The former being two year general education programs, while the latter are generally developed from manpower demands (see Figure 1). The pre-university subsystem is divided into the Arts and Science sectors while the professional programs belong to the Career sector. There are a total of 32 departments at Dawson; four in the Science sector, ten in the Arts

sector, and 18 in Careers. All programs provide their graduates with a Diplôme d'études collègiale, commonly referred to as a DEC.

Figure 1.

The System of Education in Quebec.



Adapted from the document "Des études au Québec" #8182-112 (40-1303)

Problem Definitions

Within the Career sector, 50% of the departments have less than 100 students. Their objective is to ensure that graduates find jobs, and develop careers in their field of study. Unlike pre-university, the tangible nature of success in professional programs facilitates the identification of measurable goals, hence allowing for text-book-like system planning.

The Career sector has had good success in placing its graduates and reports suggest that they are well respected by the community. Student

demand and program enrollment does not rely solely on reputation. Professional programs, more so than the pre-university, experience the impact of swings in manpower demands and economic forecasting.

It may be possible to correlate low student enrollment to good economic times (i.e. greater job opportunities) and vice versa (Brazziel, 1987). As well, the increased demand of society and business for university degrees reduces the percentage of the population seeking Cegep diplomas. Current trends toward reducing enrollments are of great concern to the Ministry of Higher Education and Science. The province-wide statistics (Conseil des collèges, Nov. 1990) reflects this decline: "Business Administration" declined by 27.9% between 1984 and 1989; "Electronic Technology" declined by 48.2% between 1984 and 1989; "Computer Science" declined by 51.3% between 1984 and 1989; and "Office Systems Technology" declined by 19.9% between 1986 and 1989.

Specific issues faced by the professional programs. There are several important concerns common to all professional programs. The specialized nature of their curriculum content and hardware, they require more faculty supervision; hence, they have smaller student-teacher ratios. The traditionally high cost of equipment and lower student numbers produces results that do not always favorable when the cost-benefit equation is applied. The giant leaps of technology causes many programs to face frequent equipment and knowledge obsolescence. This potential inability to keep up-to-date is of great importance to the viability and survival of the system (the program) and its output (the graduate). In order to remain current with the industries served, professional programs have burdened their curricula with a plethora of information. Possible consequences of

this trend are high drop-out rates and delayed graduations (taking an average of 7.4 semesters instead of 6.0 semesters); a concern that is the subject of research conducted by the Conseil des Collèges (for further elaboration see Appendix B).

Call for a needs assessment. In 1988 the Career Council (a body, unique to Dawson, encompassing all career departments) in a document entitled "Staffing and Budgets Allocations", called for a needs assessment. The Council wished to study the consequences of budgets and low enrollments.

The first assumption to be made in addressing this issue is that of purpose. Institutions are designed to solve specific problems, and address the concerns and demands of society. Over time these problems and the expectations of society change. Thus it is important to continually measure the gap between these needs and the solutions offered by institutions. According to Witken (1984):

> Needs assessments in higher education tend to focus less on discrepancy analyses at the student performance level and more on gathering data for institutional planning or on obtaining consensus on broad goals or on various aspects of the curricula or of university or college management. Community colleges are also interested in the relevance of their curricula to local and regional job markets." (p. 20)

Purpose of the Thesis

Upon the behest of the Council, the author of this thesis proposed to conduct a needs assessment. Its purpose was to act as a case study and possibly a model for future program planning. According to English (1977) "needs assessment has come to be defined and utilized in public education as a vehicle to establish and clarify institutional goals, with the explicit expectation that those goals will change the existing priorities" (p.18).

The program selected was Professional Photography (better known as the Institute of Photography) because of its willingness to participate in this research. In a needs assessment it is imperative to have the support of the participating community (Witken, 1984). In addition, the Institute of Photography has two programs oriented to similar goals, yet each caters to different student populations. There is a regular day program as well as a continuing education program. Thus the opportunity to compare data collected from the two unique student samples.

Rationale

There exist some implications on the choice of population sampled for a needs assessment. According to Kaufman (1987) the major stakeholders or human partners providing the needs-sensing data are: the recipients of the system's process, the implementers of the system's process, and the society that the system serves. This research choose to focus on the external (the society) and the internal (the recipients) referent partners. The decision to refrain from soliciting the opinions of the implementers is a conscious limitation due to the fact that many are also active members of the photographic industry (the society). The impact on the design of this needs assessment is thus to contain its descriptive nature

to these two levels of partners. By surveying the external partner, (the photographic industry) this study proposed to collect non-subjective data. The survey of the internal partner (the students) proposed to evaluate the goals and objectives of the present program.

The external survey. Designed to disclose the needs of the photographic industry, the results of the external survey will hopefully improve the relationship between the referent partners. Claude Ryan, the former Minister of Education, prioritized this interaction in his 1988 position report.

> Enfin, un souci de présence aux besoins des entreprises se manifeste de plus en plus dans ces établissements. Le cégep, notamment par ses départements de formation professionnelle et de techniques administratives, peut jouer un rôle de transfert de compétences et de connaissances vers la petite et la moyenne entreprise. (Ryan, 1988, p. 5)

Given the increased attention paid to the issue of industry/education relationship, it is imperative that professional programs place it upon their agenda. Prior to doing so, it would be prudent to investigate ways in which the system's outcome is utilized within the industries for which they are prepared.

> It would be difficult indeed for industrial institutions and schools to become totally integrated. On the other hand, total isolation of either in modern times is unthinkable. We must learn to serve society together. Each may take on certain characteristics of the other,

> sharing the resources of each other as deemed appropriate. . . . The gap between what the job requires and what the student learns as fundamentals has become too wide. . . . In short, the boundaries of the institutional systems of our society must become more permeable. (Wright, 1983, p. 3,4)

Another issue, previously mentioned, is the increasing curriculum content. It plays havoc with the student's workload. Thus the issue to be confronted is the course content, specific as well as general knowledge. Perhaps it is time to re-evaluate the structure of the educational system in Quebec (previously seen in Figure 1) and propose alternative models.

Hence, for the purpose of this study the specific issues to be examined in the external system include the following:

1. Performance assessment of the graduates. Are the results of the present pedagogy satisfactory (i.e. evaluation of the graduates)? If not, where are the greatest deficiencies located?

2. Attributes that increase the potential for success. What are the skills, knowledge, attitudes and abilities required for successful survival in the chosen career?

3. Notion of general education versus vocational skills and knowledge. In today's world how appropriate is the Quebec model of education, the "régime pédagogique"?

4. Role of industry in vocational education. Is industry willing to support a future partnership with professional programs at the college level?

5. Future trends in photography. Will technology create gaps between what is currently taught and what will be required for employment?

The internal survey. This part of the study is important in that it may provide evidence to confirm or reject a different model for the delivery of vocational education. Given the two programs (DEC and AEC) offered under the umbrella of one department, it is possible to discover if differences of values or choices exist between them.

In accordance with the needs assessment models of Kaufman (1983) and Witken (1984), social indicators are important aspects to be considered in the execution of a comprehensive needs assessment. She states that "even if it is not feasible to use social indicators in that sense, however, needs assessors should consider the merit of consulting available data before designing new data collection instruments, conducting surveys, or assessing needs through group processes" (Witken, 1984, p. 128). This study is thus designed to look for answers to the already identified problem of delayed program completions addressed in the 1988 report of the Conseil des collèges.

The specific issues to be examined in the internal system include the following:

1. The problems delaying or arresting successful program completion. Which of these problems as identified by the Conseil des collèges are relevant to students at the Institute of Photography?

2. The issue of two programs. Do sufficient differences exist between the two student populations to warrant specific treatment or modifications of either of the programs?

Summary

Due to the nature of survey research, the result of this study will be limited to the subjects and procedures used herein. They cannot be generalized to other groups. Nonetheless, it is the intention of this author to provide the career sector with a case study which confirms or refutes other research and points to areas of future concern for professional programs. In addition, this study may encourage others within the system, particularly those in positions of authority, to use needs assessment for future program planning.

CHAPTER 2

Review of Needs Assessment Models

Needs assessment is the process by which a "need" is identified. The everyday definition of "need" suggests that it may be a synonym for want, desire, or requirement: it denotes urgency and the lacking of an essential state. According to Sarthory (1977) "a need is not a desire or a wish but rather a quantifiable, measurable gap in performance, attitude or achievement between the ideal and the real" (p.24).

Needs assessment is an outgrowth of the 1960's accountability movement (Morgan, 1978). It is part of a feed-forward process that provides information which may serve as a guide in program and policy development and research. Furthermore, it attempts to synthesize existing data in order to look for goals, trends or projections of the future. "This tool identifies discrepancies or dissatisfaction in the present system thereby signaling the existence of real educational or organizational needs" (Witken, 1984, p. 21).

Needs assessment employs various methods of attaining information. Social indicators such as census statistics, and municipal or institutional records provide "hard" data for policy making. The perceptual or "soft" data are obtained through survey methods using questionnaires and interviews. Group processes (i.e. "focus groups" and public hearings) as well as futures methods (i.e. Delphi studies) are often used in data collection which are an integral part of the needs assessment. "A needs

survey should not be a wish-list for all the partners, rather an identification of gaps in results" (Kaufman, 1988, p. 63).

The setting of a needs assessment may cover areas of curriculum modification, research and development, planning and policy making, human service studies, community and government studies and, organizational renewal or market research in private sector settings. Often terms such as "needs analysis", "front-end analysis", "front-ending", and "problem analysis" are inappropriately used to refer to the act of need identification. These procedures are part of systems analysis but they come after the needs assessment. They are more concerned with explaining the circumstances of the need.

In a recent review of the literature, Benjamin (1989) presents a synthesized definition of needs assessment. He views it as "a process by which gaps between current and required outcomes or outputs are determined and prioritized, with the most important selected for resolution, prior to detailed analysis of needs" (p. 13). Similarly, Kaufman & Valentine (1989) state that "needs assessments identify the gaps in results and thus provide the bases for deriving useful and justifiable objectives" (p. 11). Kosecoff and Fink (1982) identify needs assessment as "the goals for which a program should strive, goals that are important to society, not currently being achieved and potentially feasible" (p. 27). Trimby (1979) in his review of needs assessment models differentiates between a concern and a need. He defines a need assessment as a collection of data that turns an expressed concern into a validated need. In so doing, it provides a means through which a hypothesis may be validated or refuted. Witkin (1984), on

the other hand, suggest that "needs assessment is...'soft technology' in that it represents a traceable method for bridging the transformational areas" (p.137). Pedersen (1977) believes that needs assessment represents the interface between the school system and its clients and between the administration and the board of education.

There is no "right" way to do a needs assessment. The decision to select one approach over the other should be based upon the level of intervention and desired results. Studies of the literature conducted by Witken (1977) and Trimby (1979) identify and discuss a variety of needs assessment models, kits and procedures. Emerging from this review are the notions of deficiency and discrepancy based models. The former is founded on the principle of merit, or evaluation of the system's current objectives. The latter is based on goal-free planning, or renewal of the system's objectives.

Deficiency Models: Evaluation

A deficiency model of needs assessment is employed largely in situations where evaluation is the prime objective. It implies the concepts of value worth or merit. Kosecoff & Fink (1982) suggest that needs assessment used for evaluation appraise a program's merit and provide information about its goals, expectations, activities, outcomes, impact and costs. This use of the process is value-laden and attempts to identify which objectives have been attained. The evaluation of outcomes yields feedback and suggestions for revisions thereby providing information on the gaps

that exist and feeds into the cyclical nature of the systems approach (Trimby,1979).

As a means to establish the internal performance or competency of a system's product, a needs assessment uses similar data to that of an evaluation. Greenwald (1973) writes that "a decision to select an internal mode of needs assessment is a value decision. . . chosen to assume the external utility of the current system and is interested in optimizing whatever currently exists" (p. 143). When viewed this way it tends to be used more locally and suggest deficiencies of a program.

The deficiency needs assessment judges performance by providing information on the system that allows the researcher to gauge accomplishments. Such applications are instructional and are determined more from performance data than from perceptual data. The product of the system is tested for its level of competence and mastery. It is similar to an evaluation because it relies on performance analysis and criterion-reference testing. Thus the similarity between evaluation and needs assessments. Kaufman (1983), however, disagrees with this comparison. He views evaluation as a reactive procedure that compares results with existing objectives rather than the potential "what should be". Nevertheless, several well known and respected authors, (e.g. Roth 1978; Scriven & Roth 1978; Guba & Lincoln 1981) employ needs assessment as a tool for evaluation.

Discrepancy Models: Planning

The majority of discrepancy models are built upon the pioneering work of Kaufman (1972) who placed them in a context of systematic educational planning. They identify needs assessment as a means to determine gaps between present results and those that are desired. This approach employs the needs assessment as a tool for planning and testing the validity of the system's objectives. It is appropriate when there is a desire to plan for new growth or when institutions or companies are threatened by cutbacks. Additionally, when the target audience begins to change due to age, economics, sex or immigration this process proves successful.

Placed in priority order, needs serve as a basis for educational planning (Kimston & Stockton, 1979). Using needs assessment as a planning tool has been supported by the many works of Kaufman (1977, 1988, 1989), English (1979), Witkin (1984) and others.

External use of needs assessment.

> Needs assessment is an integral part of program planning. It does not end with analysis of data but rightly extends into the program-planning phase, guiding the selection of alternative solutions. Its purpose is not to suggest solutions, however, but to identify those areas where solutions are most required and to set criteria for their resolution. (Witken, 1984, p. 3)

As a planning tool, needs assessment, is goal-free. Freedom from existing constraints is typical of a humanistic approach to future planning.

This approach places people in the position of greatest importance. Their current and future welfare is prioritized above the survival of any agency, school, school district, method or means. It represents the noble ideals of education laid down by Dewey, and Maslow. The status quo is questioned in an attempt to assume the validity and utility of what it is currently being accomplished (Witken, 1984).

The goal-free approach to planning studies the external utility of the system's output. In this way it is a political decision and may be preferable to piece-meal internal problem-solving. Kaufman (1990) writes that this level of planning liberates the researcher from existing goals and from the "business as usual" attitude. On the other hand, Greenwald (1973) writes that "there can be no valueless or 'value free' school. Even a decision to present no values is a value decision itself" (p. 142).

Internal use of needs assessment. An internal system use of the discrepancy model would in all likelihood be directed toward curriculum planning. Pratt (1980), Kaufman and English (1979), Dick and Carey (1977), and Cloud (1973) have developed specific tools to deal with problems of curriculum modification. They are viewed as part of the systems approach to instructional design. Witken (1984) believes that "the curriculum is a planned series of interventions in which the resources of the school system are configured in such a way that goods and services (processes) are utilized to produce the desired results" (p. 129). Dick & Carey (1977) are concerned with the identification of instructional needs which are

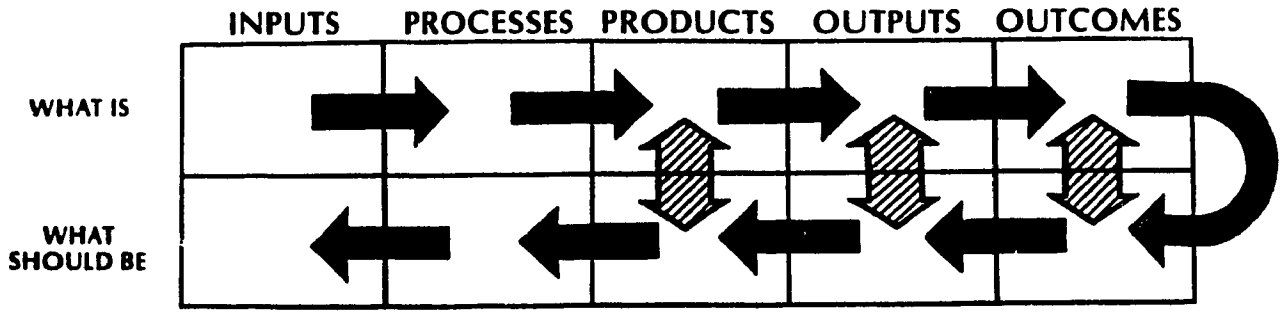
transformed into instructional goal statements and from which instruction can be designed.

Kaufman Model

The Kaufman (1988) model defines need as "a measurable discrepancy, or gap, between current and desired results" (p.13). His approach is based on a five stage Organizational Elements Model (OEM) which describes the system in terms of input, process, product, output, and outcome levels (Figure 2). This "system approach" model identifies means from ends and links them in a forward movement from inputs to outcomes in determining the existing system, "what is". In the identification of the desired system, "what should be", it reverses the process starting with the outcomes, "what should be" (Kaufman, 1984, p.14). From the comparison of those data, the "need" can be identified.

Figure 2.

Kaufman's Organizational Elements Model.



Adapted from Kaufman 1982.

Kaufman and Bowers (1990) describe a "system approach" as a proactive "outside-in" method which looks at problem identification before problem resolution. Always focusing on the results level, it does not propose solutions. Kaufman suggests that we live in a society bent on discussing solutions while taking too little time to adequately identify problems. On the other hand, these authors consider the "inside-out" method as a reactive "systems approach". It may be said that the "systems approach" begins with the presumption that "a need or problem has already been properly identified and justified, and proceeds immediately to the analysis of the pressing problem" (Kaufman & Bowers, 1990, p.7).

The Kaufman model of needs assessment may be performed at any of the three results level of the system approach. Needs assessment at the output level is considered a Beta-type assessment and at the product level, a Gamma-type assessment (Kaufman,1977). Accordingly assessment performed at any lower levels are considered "quasi-needs assessments". Assessments conducted on the outcome, the most strategically powerful level, are called Alpha-type assessments. A needs assessment started at this level "will allow one to compare the gaps between: 'What Is' (current results) and 'What Should Be' (emphasis upon should) in terms of organizational usefulness in having positive societal impact . . . (Additionally, it) will allow a 'total' organization to determine: (1) what is now working successfully; (2) what new should be added; (3) what old should be deleted or modified for the total organization, not for just a course or a part of a curriculum" (Kaufman, 1983, p. 4).

Strength of the Kaufman model. The distinction between means and ends is the absolute requirement of the Kaufman needs assessment model (1972 to 1990). The strength of the approach is that the system partners, particularly the "referent externals", approach planning from the outside-in there is a greater likelihood of common goals. Planning based on "means" rather than "ends" experiences great difficulty in gaining consensus and selecting the system's priorities.

The "system approach" provides the organizational planner with a flexible yet comprehensive model which adapts to the desired level of planning. Furthermore, Kaufman (1990) outlines a four phase procedure for strategic system planning (see Appendix C). This process identifies, scopes (selection of entry level), documents and justifies the needs, places them in priority order and selects those to be eliminated. Again, the strength of this model is that it takes into account the values and concerns of both internal and external partners, thereby providing a holistic view of the focal system and the impact it has on the system in which it is nested. As Kaufman (1988) states, "needs assessment will identify both internal (educational) and external (societal) gaps in results" (p.15). This social consciousness is in keeping with the Mission Statement (1987) of Dawson College.

Yet another strength of the Kaufman model is that it can be adapted for education and/or business, unlike other models that are more appropriate for one or the other. The Coffing (1977), Lee (1973) and Harless (1975) models appear to use a Beta level of entry. They do not question the objectives and goals of the existing system. The Coffing and Lee models are

educationally based while the Harless model is designed primarily for organizational environments.

Difficulties and limitations of the Kaufman model. The major strength of the Kaufman model is also its major limitation. It is difficult for planners to get permission to perform an Alpha-type needs assessment. The holistic view of the system is generally deemed too broad by the organization's administrative body. Accomplishing this noble task may prove too frustrating and thereby be abandoned for an easier road.

Most needs assessment models and kits have developed extensive tools for determining how to disclose the existing situation. Not much, however, has been written on how to identify the ideal state (what should be). "Goals or desired conditions are usually conceptualized within the existing educational context and data or opinions are collected on existing conditions regarding those goals" (Witken, 1977, p. 10). This deficiency also appears in the Kaufman model. It is harder to identify goal-free objectives than to comment on those that already exist. Additionally, it is more difficult to create survey instruments that avoid suggesting solutions. Traditional needs assessment kits and questionnaires operate on the process level (e.g. training needs assessments, etc.).

Yet another weakness is found in the issue of attaining goals set down by the needs assessment. As Kimpston & Stockton (1979) state, "if we are to grapple effectively with the realities of curriculum planning, we must not only identify real problems, as Kaufman suggests, but we must also set realistic priorities among these problems" (p. 21).

The Focal System

Where does one start to assess the needs of a system? It has been suggested that this should be a holistic process, that not only the system under study be observed but also the larger system of which it is a part Nickols (1983). Therefore, before starting, it is imperative to describe the components and the players involved.

The Institute of Photography. The Institute of Photography contains two functioning and integrated subsystems: (1) a full-time regular day program (funded by the Ministry of Higher Education as a department in the Visual Arts sector) and (2) a full-time continuing education program (funded as adult education). The "regular" day, six semester program provides its graduates with a Diplôme d'étu[illegible]ollégiales (DEC) while the continuing education, five semester program results in an Attestation d'études collégiales (AEC).

For the past 12 years the AEC has been a successful career program at Dawson. In 1986, the DEC joined the ranks of the other Visual Arts offered at the College and appears to be following in the footsteps of it sister program. These two programs collectively enroll approximately 250 students per term and graduate approximately 50 students in each academic year. Of this enrollment figure, the DEC program is the smaller with 97 students in the Fall semester of 1990.

The DEC program requires its student to complete 50 credits (a total of 2250 hours of photography and design courses). Of these 50 credits, 16

are made up of English, Humanities, Complementary, and Physical Education courses. The AEC program requires the completion of 18 subject specific credits (a total of 975 hours of specific photography courses). The DEC program is designed around a five day seven hour schedule, whereas the AEC is scheduled on a four day 16 hour week. The AEC program at the Institute of Photography is unique in that it accommodates students at all five levels of the program with three different schedule options (four mornings, two full days, or four evenings).

The obvious scheduling differences and curriculum content suggest that the programs at the Institute address different populations. The objective of both programs is, however, the same. It is to produce graduates with the skills, knowledge and attitudes required to gain employment in the field of commercial photography. In so doing, the graduates are provided with information on a variety of photographic specialities featuring studio and darkroom techniques. The curriculum also addresses the notion of marketing and sales with an emphasis on self-employment. Therefore graduates start their own photographic businesses (professional studios, labs, or freelance) or find jobs working for other photographers, labs or cooperations with photographic departments (e.g. Canadair, Pratt & Whitney, The Gazette, Canadian Press, etc.).

When last surveyed (1986) the AEC graduates reported that 75 percent were successfully employed in photography studios, photographic laboratories or related businesses (see Appendix D). There has been no further survey of the graduates. Therefore one can only speculate that the

numbers have been consistent with other trends in the manpower market and have declined somewhat, but not significantly.

Summary

This study is not a justification for implementing a new program nor is it an attempt to discover the public's demands for photography by performing a general community survey. Rather, it is an attempt to identify the partners in the educational system at the Dawson Institute of Photography and from their responses to similar questionnaires discover the gaps in the results of this system.

Within every system there exist technical, organizational or institutional level problems which inhibit or prevent efficient operation of the system. This research will study the institutional concerns as well as the educational concerns and requirements of the external partners. Once identified, the needs will be analyzed and recommendations made to close the gaps between "what is" and "what should be".

CHAPTER 3

Method

The step of data collecting "identifies and defines: what is, what should be and what could be" (Kaufman, 1990, p. 6).

Subjects

For the purpose of this thesis the following groups were identified and selected for the needs assessment survey: (1) the owners of photographic businesses in greater Montreal (studios, professional photographic laboratories, and the self-employed) and (2) regular day (DEC) and Continuing Education (AEC) students at the Dawson Institute of Photography. The decision to exclude the graduates of the program was made due to the fact that many of those who would be easily reached also make up part of the industry group. Therefore it would provide redundant information.

The industry sample size was 120; making up the group were members of the photographic community including studio owners, freelance photographers, photographers in corporate and institutional photography departments, photofinishing labs, as well as related industries which develop and sell photographic products. The range in size of company went from the small business to those at the national level, employing over one hundred individuals. According to Statistics Canada (1989) the definition of a small business is one that employs less than fifty.

In the case of photography, however, it would be described as one that employed less than five.

The second sample was drawn from the full-time students of the Dawson Institute of Photography. The population is approximately 275 students. They range in age from 17 to 65 and are enrolled in either the full-time DEC program or the full-time AEC program. The sample of 65 students was stratified and randomly selected from all levels of the two programs.

Instrumentation

Two cross-sectional data collecting surveys were used for this study; one for students and one for industry. Five of the questions were common to both surveys and allowed for cross tabulation potential.

These questionnaires attempted to identify areas of discrepancy between what is and what should be. Its design was based on the Kaufman (1989) model. The external needs assessment survey was meant to gauge the goals and objectives of the photographic community, the real world in which the institution is nested. The internal survey was intended to test the utility and validity of existing goals and objectives of the system. In so doing, it identified obstacles to learning.

The instruments were composed of both multiple-choice and open-ended questions. Open-ended questions were used to allow the partners to identify for themselves the indicators used in the data analysis. Furthermore, it encouraged participation and the potential of greater understanding of the issues (Sudman & Bradburn, 1983). The number of

questions were kept purposefully small so as to encourage a better rate of return, given the busy schedules of business people.

Industry survey. The industry survey consisted of 16 questions, seven of which were multiple choice, eight open-ended, and one rating question (see Appendix E). Questions 1, 13, and 6a, b, c, surveyed respondent's attitudes toward the general and specific education components of the photography program as well as their level of agreement for participating in courses designed to update skills. Questions 2, 3, and 4 provided demographic information on the size of the business (i.e. the number of employees) and the major type of photography that the company produces. Questions 5 and 6 described the photography market, job openings and skills requirements. This section was intended to describe the types of job openings that exist for photography graduates other than self employment. Respondents were asked to describe the skills necessary for success in their field of photography. Questions 7 and 8 were designed to gauge opinions on the performance of the program's graduates. Question 9 required the respondent to describe the major problems with job applicants. This was to allow for a comparison between what is necessary for success and what is the greatest missing element. Questions 10, 11, and 12 revealed opinions of respondents toward the future of photography. The discrepancy between "what is" and "what should be" will provide this researcher with the "soft" data required.

Students survey. The student survey contained 12 questions with ten multiple choice and ranking or rating questions and 2 open-ended questions (see Appendix F). Three questions (5, 6, 13) surveyed attitudes toward the educational component in the teaching of photography. Questions 3 and 4 provided demographic information on age, and former educational experiences. Questions 2 and 10 profiled student responses to the photography program while question 5 attempted to identify opinions on what is important for the education of a photographer. Question 9 identified their willingness to participate in co-operative learning experience.

After much consideration, the survey was designed using the most Kaufman-like instrument as a guide. The student survey, as well as the industry survey, were modelled after the previously tested needs assessment instrument used by the J. Sargeant Reynolds Community College Manpower Needs Assessment (Burnette, 1984).

Procedure

External partner: industry sample. The data for the photography industry survey were obtained by distributing questionnaires to a stratified random sample of businesses within two major categories. A total of 120 were sent, 80 to studio photographers and 40 to photographic laboratories or photo finishers.

The sample for industry was stratified because of the inherent difference in numbers and concerns that exist between the group that specializes in the creation of the image (studio owners, freelance

photographers, and photographic departments of larger industries) and those that specialize in the finishing of the photograph (photo-finishers/labs, darkroom technicians). The fundamental problem found in survey research is that of generalizability of the data. The results of the sample survey may not be representative of the population. With stratified random sampling, however, the chances of representativeness are increased. Therefore the characteristics of the sample are more likely to be those of the population (Slonim, 1967). The population of the first group (photo-producers) is approximately 600 or more. The latter group (photo-finishers) is much smaller with approximately 85 businesses.

A cross section of 80 photo-producers and 40 photo-finishers were randomly selected from the greater Montreal area using the membership list from two professional photographic organizations (Canadian Association of Photographers and Illustrators in Communication (CAPIC), the Association of Professional Photographers in Quebec, and a photographers directory produced by the government of Quebec in 1988: Bottin des Intervenants en Photographie de la Ville de Montréal published by Ville de Montréal, service des loisirs et du développement communautaire).

Six randomly selected members of the population (5% of the total sample) were sent a first draft of the Industry survey instrument containing 16 questions. The purpose of this instrument testing was to check for any ambiguity in the questions. The request to rank order their responses was misunderstood by five of the six sample cases. Due to this pretesting, question 6 was simplified by eliminating the ranking aspect. In

the pilot testing question 4 was simplified by providing fewer options; question 10 was modified and the choice, "graduated, program completed" was added for clarity. Question 21 proved to be too ambiguous and was removed altogether. The results of the pretest were not used in the data analysis.

To conform to the population, the questionnaire was written in both English and French. It was administered as a return-mail questionnaire that contained self-addressed postage paid envelopes to facilitate returns. A telephone call informing the participant of the intent and purpose of the survey preceded the mailing presumably encouraging a larger return rate. In addition, the language preference of the recipient was ascertained. This step almost completely eliminated non-deliverable questionnaires, only two were undeliverable. The subjects were given two weeks to respond after which time there was a follow-up phone call to established a reason for the delay. Another mailing was made to replace questionnaires that had been mislaid, throw out, incorrectly addressed or directed to the wrong person.

Return rates were encouraging when after only two weeks of the initial mailing, 40 questionnaires (33.3%) had been mailed back to the Institute. An additional 12 completed questionnaires were returned after the follow up phone conversation. These procedures helped to encourage 12 more returns bringing the total returns to 52 or 43.3%. A cut off date of March 1st, or six weeks, was selected in conformity with Alreck & Settle (1985) findings that the majority of surveys are returned within the first three weeks.

Internal partner: student sample. In accordance with the recommendations of English and Kaufman (1977) a stratified random sample of the two partnered student populations was made to ensure representativeness. The decision to survey only daytime students in the AEC program was made so as to keep the information relevant between the regular day and the continuing education students.

The students enrolled in the first semester of the AEC program were not included due to the fact that their ability to evaluate the system would be limited. In addition, there would be no comparable group for the DEC since they accept new entrants once a year in September. Without this first semester group, the number of daytime DEC and AEC student populations is approximately the same, and so the sample sizes were equal. The population was further stratified according to their semester in the programs, assuring a full representation (second through sixth semesters). Hence, the student sample was composed of 33 DEC and 33 AEC students.

The student survey was distributed to 66 students during their breaks from studio, lab or lecture classes on May 2nd, 1990. The reason for the selection of this date was because the schedule showed all groups would be present on campus. The majority of the randomly selected students were attending studio and lab classes therefore which facilitated the distribution of questionnaires without disruption of lectures. The remainder of approximately 12 students who were in classrooms were approached at the class break. They were given until the end of their class to return the questionnaires either directly to the researcher or the department

secretary. The on-campus distribution of surveys greatly increased the returns (Kalton, 1983). Even with this, four surveys were not returned.

Data Coding

A random selection of approximately 50% of returned questionnaires was used for the process of preparing the data coding protocols. The data were collated and general trends in the responses emerged. These were used as category headings. Wherever possible, the data were coded along the lines of the identified subject headings used in Chapter One. Data that could not be coded into any of the categories were recorded as "other".

CHAPTER 4

Results

The results section is divided into: (1) the data based on actual institutional and organizational situations, and (2) the data based on attitudes and perceptions. The former are referred to as "hard" data, while the latter are referred to as "soft" data (Kaufman, 1987). The subgroups to each of these sections are the external partner (the Industry survey) and the internal partner (the Student survey).

A total of 114 completed questionnaires were returned, 62 from the student survey and 52 from the industry survey. The best return rate of 88% came from the student survey, while the industry rate was 43%. The stratified sample return rate varied from one subgroup to the other. For industry, the photo producers returned 45% of the 80 mailed questionnaires and the photo finishers returned 40% of the 40 mailed questionnaires. Table 1 represents the response rate from the different populations and their stratified subgroupings.

Table 1

Response Rate from Both Sample Groups

	mailed	returned unanswered	responses	response rate (%)
Phototakers	80	2	36	45.0
Finishing	40	0	16	40.0
Industry Total	120	2	52	43.3
DEC	35	0	33	94.3
AEC	35	0	29	82.9
Student Total	70	0	62	88.6

Hard Data: The Institution and Organizational Reality

Classification of Industry Sample

Description of the sample. The description of the business categories is as follows: Thirty eight percent of the respondents own some type of photographic studio (four of these cases identified themselves as both studio and labs and have been calculated into both total percentages; see Table 2). Twenty-three percent are freelance photographers who do not own studios; seven percent work in photography departments at larger cooperations such as newspapers, wire services, etc.; twenty-five percent either own their own labs or work as managers of larger photographic laboratories; and five percent identified themselves as none of the above. Two of these

reported that their businesses were agencies for stock photography and one was a multi-media production house.

Table 2

Description of Industry Sample

	Count	Percentage
Photo studio	16 + 4(in both)	38.5*
Freelance	12	23.0
Photo department	4	7.7
Photo labs	13 + 4(in both)	25.0*
Other	3	5.8
Total	52 + 4(appears in both)	100 of total respondents.

Note: these calculations are based on 52 respondents plus four cases that are represented in both the category of Photo Studio and Photo Lab. *For this calculation only the total number of respondents is 56.

Number of employees. The average number of full-time employees (including the respondent) was 18.20, however, the mode was 1, and the range was 399 with a minimum of one to a maximum of 400 employees. The standard deviation was 60.98. Because of the large standard deviation, the data were reconfigured to exclude the data entries that were at the extremes of over 100, thereby reducing the range to 54. The standard deviation was then calculated at 9.83 and the mean was 5.38. The mode was still one employee. The number of part-time employees was equal to a

mean of 1.8, the mode was equal to one, the range was 30 and, the standard deviation was equal to 0.64.

Photographic specialty of the company. The sample was asked to identify the type of photography in which their business specialized. Responses were coded into the three most commonly given answers with the uncategorizable responses recorded as "other". Thirty-seven percent fell into the Commercial photography category. This covers photographic jobs such as advertising photography, catalogue, editorial people, product and fashion. Seventeen percent specialize in Portrait photography, which includes all respondents that specifically indicated wedding photography. Twenty-five percent stated that their businesses were photographic labs. (This figure is consistent with the results for question 1.) Twenty-one percent of the respondents indicated businesses that did not fall into any of the above categories and as such were classified as "other". Included under this title are: stock photography businesses, art reproduction, multi-media and, newspaper photography. (see Table 3).

Table 3
Photographic Specialties

	Count	Percentage
Commercial photo	19	36.5
Portrait photo	9	17.3
Photo processing	13	25.0
Other	11	21.2

Classification of the Student Sample

Demographic of the student survey. The majority (65%) of the student sample fell into the 19 to 25 age group. A smaller percentage (25%) fell into the 26 to 35 age range. The remaining numbers were evenly spread between the choices with no entries in the 56 and over category. A further examination of the results revealed that the age range differed between the DEC and AEC subgroups. Seventy eight percent of the DEC students were between the ages of 19 to 25 while 12% fell into the 26 to 35 age group. The average age of the DEC student also fell into the 19 to 25 group but almost an equal amount, 41%, belonged to the 26 to 35 range. These groups were the DEC, "regular" day students and the AEC, continuing education day-time students (see Table 4).

Table 4

Student Age

	DEC (%)	AEC (%)
18 and under	9.1	0.0
19-25	78.8	51.7
26-35	12.1	41.4
36-45	0.0	3.5
46-55	0.0	3.5
56 and over	0.0	0.0

Number of courses taken per semester. The student sample was asked to indicate the number of Dawson College courses they were enrolled in for the current semester (Winter 1990). Table 5 shows that the average academic load was 5.2 courses. Twenty nine percent were taking five courses, 17% were taking two and, 12% were taking seven.

Table 5

Number of Courses (at Dawson College) in Which Students were Registered During the Winter 90 Semester

No. of Courses	Count	Percentage
one	1	1.6
two	11	17.7
three	1	1.6
four	7	11.3
five	18	29.0
six	3	4.8
seven	8	12.9
eight	5	8.1
nine	5	8.1
ten	2	3.2
eleven	0	0.0
more	0	0.0

Stratifing the data along the lines of the original populations, we find that the DEC students enroll in an average of 6.8 courses or 2.2 less than a full load. The AEC students on the other hand enroll in an average of 3.6 courses or .4 less than is considered a full load.

Other post-secondary educational experiences. When asked if they already hold a post secondary degree, 46% of the total sample answered yes. This percentage represented 28 respondents of whom six (or 21%) were enrolled in the DEC program while 22 (or 78%) were members of the AEC program (see Table 6).

Table 6

Post secondary Degrees Held by DEC and AEC Students

	Yes	No
DEC	6	27
AEC	22	7

The respondents who answered positively to the question were asked to state what degree(s) they held. The majority held Cegep degrees in Creative Arts or Social Science. There were also a variety of other disciplines and degrees ranging from DEC's in Commerce, Business Administration, Marketing, Nursing, and Biochemistry. There were five respondents with Bachelor degrees and one with a Master of Arts.

Soft Data: Perceptual and Attitudinal

Performance Assessment and the Impact of the Graduate on the Labour Market and Job Potential

Job openings. Respondents were asked to comment on the availability of jobs in their field of photography. The information was summarized and categorized into four main groupings (see Table 7). Thirty-four percent of the sample stated that jobs are available for darkroom technicians in big or small labs or studios. Two cases specifically cited that

expertise in black and white printing was what they look for and one cited the demand for a one-hour lab technician. Nineteen percent claimed that there were openings as photographic assistants. Of these, most were for commercial studios while three responses specified they required assistants for wedding photography. The category "other" included: experienced video production and editing personnel, food stylist, coordinator, programming technician for audio-visual, sales manager and, one electro-technician.

Table 7

Job Openings

	Count	Percentage
Darkroom tech, printing	18	34.6
Commercial assistant	10	19.2
None/few	5	9.6
Other	7	13.5
Non responses	12	23.1

When asked if they had ever hired or interviewed a graduate or student of the Dawson Institute of Photography, half of the respondents answered yes. Forty-six percent responded no and 3.8% did not reply. The respondents who answered yes to the question were asked to rate their impression of these individuals on the following scale: better than average,

average, or below average. The majority gave a rating of average. Seven percent, however, did not respond even though they had interviewed or hired a graduate or student of the program (see Table 8).

Table 8

Industry Evaluation Rating of Dawson Graduates*

	Count	Percentage
better than average	5	19.2
average	17	65.4
poorer than average	2	7.7
missing values	2	7.7

* percentages are based on 26 responses.

When asked to list the biggest complaint(s) respondents had with regard to the qualifications of applicants, the responses were many and varied yet it was possible to code the data into four major groupings.

Forty-three percent mentioned some form of attitude as a problem. The precise words used encompassed phases such as: laziness; clockwatching; slowness; lacking in initiative; (self-) motivation; maturity; responsibility; ambition; patience; personal vision; and professional attitude/ethics.

Thirty-two percent cited unrealistic expectations as the biggest problem(s). The list of unrealistic expectations ranged from salary demands, to "delusions of grandeur", in reference to requirements of the job.

Twenty-seven percent of the sample cited poor technical skills as one of their complaints. The specific comments included: poor darkroom and printing skills (black & white and colour photography), portfolios that demonstrated technically weak images, and the lack of knowledge about sensitometry and chemistry.

Thirteen percent of the sample identified their complaint as the lack of prior work experience. Eighteen percent mentioned other problems that were not frequent enough to sort into any of the above categories. The category of "other" contains the following comments: Poor written and verbal skills; poor CVs; too artistic, lack of common sense; lack of organizational and visual skills; personal presentation; punctuality. Eight percent claimed they had no identifiable complaints (see Table 9).

Table 9

Biggest Complaints Photographic Business Have with Regard to the Qualifications of Applicants*

	Count	Percentage
attitude	16	43.2
expectations	12	32.4
technical abilities	10	27.0
prior work experience	5	13.5
no problem	3	8.1
other	7	18.9

*Percentages are based on 37 responses.

The Role of General and/or Specific Education in the Curriculum

The following questions were part of a larger survey segment that sought attitude and belief responses on the issue of what should be included in the photography education. The respondents were provided with a three tiered scale (1=agreement, 2=undecided, and 3= disagreement) and asked to provide answers in the following categories.

On the question of including Liberal Arts education as part of an overall program in professional photography, 63% of those in industry agreed while only 40% of the students agreed. A Chi-square analysis (Table 10) between the two samples and the question of Liberal Arts education in

the teaching of photography resulted in a statistical significant difference ($p<.003$).

Table 10

Comparison of the two Survey Groups Regarding the Acceptance of Liberal Arts Education in the Photography Curriculum

Opinion	Student population (62)	Industry population (52)
Agree	25 40.3%	33 63.5%
Undecided	14 22.6%	14 26.9%
Disagree	23 37.1%	5 9.6%

Chi-square = 11.89, df = 2, $p < .01$

When asked about Fine Arts as a specific curriculum topic, 78% of industry and 80% of students agreed. No statistically significant differences were found between the analysis of the two survey populations and the acceptance of Fine arts as part of the curriculum. (N.S., Chi-square = 3.56, df = 2, $p>.1$)

Opinions regarding Science Education in the curriculum showed a large variation among the samples with 44% of industry and 22% of

students agreeing. The Chi-square analysis yielded a significant result ($p<.001$) with over 60% of the student population in disagreement with this idea (Table 11).

Table 11

Comparison of the Two Survey Groups Regarding the Acceptance of Science Education in the Photography Curriculum

Opinion	Student population (62)	Industry population (52)
Agree	14 22.6%	23 44.2%
Undecided	10 16.1%	20 38.5%
Disagree	38 61.3%	9 17.3%

Chi-sq = 22.71, df = 2, $p< .001$

The final question on the value of Computer Education resulted in the industry sample responding with 53% in favour while only 32% of the students agreed. The difference proved to be statistically significant ($p<.001$). The data were almost inversely proportional with 46% of the student sample disagreeing with computer education and 53% of the industry survey citing their agreement (Table 12).

Table 12

Comparison of the Two Survey Groups Regarding the Acceptance of Computer Education in the Photography Curriculum

Opinion	Student population	Industry population
Agree	20 32.3%	28 53.9%
Undecided	13 21.0%	20 38.5%
Disagree	29 46.8%	4 7.7%

Chi-square = 21.04, df = 2, p< .001

Requirements for Success in Photography

Listing the most important skills and knowledge for success in the respondent's field of photography produced a variety of answers which were collated and coded into the four most often cited categories identified by both survey groups. These were technical skills, on-the-job experience, marketing and communication skills, and creativity and/or talent.

In summary, the data show that Technical Skills was cited by 71% of Industry and 58% of students. In the category of On-the-Job Experience, 42% of industry identified this as required for success, whereas the student sample response was 11%. Of those citing Marketing and Communication Skills as important, 34% were from the industry sample and 33% from the

students. The data entered into the category of Creativity/Talent resulted in 21% from industry and 37% from the student samples.

A Chi-square test was carried out on the data obtained from the two surveyed samples and the skills or knowledge required for success as a photographer.

The category of Technical Skills, resulted in no significant difference between the two survey groups and their decisions ($p>.1$). Over 60% of the total population or 73 individuals, chose to cite this as a quality for success. Of this percentage, 58% were students and 71% were from the industry surveys. (N.S., Chi-square = 2.1, df = 2, $p>.1$)

The category of Marketing and Communication skills, yielded a nonsignificant result to the chi square test ($p>.1$). Of the potential 114 total respondents, only 39 identified these qualities as important for success. The results between the two groups were almost even with 33% of the students identifying this as a variable in success and 34% of industry reaching the same conclusion. (N.S., Chi-square = .069, df = 2, $p>.1$)

There was a significant difference between the two groups and their opinion regarding the desirability of prior job experience ($p<.002$). Of the 29 responses that viewed this experience as noteworthy, 24% were from the student population while 75% were from the industry survey group (Table 13).

Table 13

Contingency Table Resulting from the Chi-Square Analysis Between the Two Survey Groups and the Requirement of Prior Job Experience

Opinion	Student population 62	Industry population 52
Yes	7 11.3%	22 42.3%
Not mentioned	55 88.7%	30 57.7%

Chi-sq=14.35, df=1, p<.002

A Chi-square analysis performed on differences between the two survey groups and the qualities of creativity and/or talent yielded a significant result (p<.064). Of the 34 persons that gave creativity as a desirable quality for success, 67% were students while 32% were from industry (see Table 14).

Table 14

Contingency Table Resulting from Chi-Square Analysis Between the two Survey Groups and the Identification of Creativity and/or Talent as a Desirable Quality for Success

Opinion	Student population 62	Industry population 52
Yes	23 37.1%	11 21.1%
Not mentioned	39 62.9%	41 78.9%

Chi-sq=3.44, df=1, p<.064

The second half of this question asked the respondents to rate the importance they place on several issues: formal schooling, on-the-job learning, and cooperative learning. The majority of industry saw little value in formal schooling and were split on the question of on-the-job training, but they strongly supported the notion of co-operative education. The results of the sample are detailed in Table 15.

Table 15

Industry's Opinion on Education or Job Experience

	little importance	important	very important	missing value/ not mentioned
Formal schooling	4 7.7	9 17.3	12 23.1	27 51.9
On-the-job experience	1 1.9	0 0.0	29 55.8	22 42.3
Coop program	1 1.9	3 5.8	46 88.5	2 3.8

The survey asked the student sample similar but not identical questions. Therefore no Chi-square test was performed on tables 15 and 16. The question on schooling was broken down into two categories to identify if there was a difference between Cegep education and university education. The results indicate that the majority of students agree with the necessity of a Cegep degree but were not convinced that a Bachelors degree would do anything extra for them.

In reference to the issue of on-the-job learning, 83% value the experience. On the notion of co-operative education, 82% believe it to be very important (see Table 16).

Table 16

Student's Opinion on Education or Job Experience

	little importance	important	very important	missing value/ not mentioned
CEGEP diploma	8	27	26	1
	12.9	43.5	41.9	1.6
Bachelors degree	21	23	14	4
	33.9	37.1	22.6	6.5
On-the-job experience	1	8	52	1
	1.6	12.9	83.9	1.6
Coop program	0	10	51	1
	0.0	16.1	82.3	1.6

Future Requirements of the Photographic Industry

To allow for comparisons, the survey results from the two sample groups were organized under the same summary titles. When asked to predict if there will be changes in the way their photographic business will be conducted, 46% of the industry sample answered yes. While 53% predicted no changes to the occupation or job trends due to technological innovations in photography. On the other hand, 85.5% of the student sample agreed with the forecast that the future of photography will be affected by changes in technology. A comparison of these groups' opinions produced a significant difference of $p<.01$ (see Table 17).

Table 17

Contingency Table Resulting from the Chi-square Analysis Between the two Survey Groups and Their Opinions on the Changes Expected in Occupational or Job Trends due to Technological Innovations or Other Factors

Column % Opinion	Student population 62	Industry population 52
Yes	53 85.5%	24 46.2%
No	9 14.5%	28 53.9%

Chi-sq=19.955, df=1, p<.01

Those respondents who predicted changes in occupational trends due to technological innovations were asked to describe the expected changes (question 11) and the new skills and/or knowledge that will be required to accommodate these changes (question 12). Not surprisingly, most responses for these two questions (11 and 12) were either identical or similar. To eliminate redundancy, the information was combined, summarized and categorized to produce one set of results falling into one of two major categories: (1) the image manipulation potential of the computer as an electronic darkroom and (2) the electronic image taking technology such as analogue and digital camera.

In Table 18 the results of the industry survey show that 41% predict that photography will be affected by computers and their potential to enhance, manipulate and create a new trade and art form, while 25% held the opinion that knowledge of how to use video-type electronic hardware will be necessary; 33% cited something other than the above.

The results of the student sample yielded more conclusive responses with 63% citing computer imaging technology and the knowledge of their constructs, while 33% responded with a prediction that the electronic hardware used to take pictures will change and there will be a gap in knowing how to maximize the usage of the equipment. Only 3% of the responses did not fall into either of these broad categories.

Table 18

Opinions on New Skills and/or Knowledge Required to Adapt to the Technological Changes in Photography

Opinion	Student population 60	Industry population 24
Computer imaging	38 63.3%	10 41.7%
Electronic hardware	20 33.3%	6 25%
Other	2 3.3%	8 33.3%

The "other" category absorbed many uncategorizable statements. Comments from industry (as related to Question 11) included the forecasting of totally automated printing; greater importance on money; franchising of one hour labs; the requirement of business management skills. Those from the students included such statements as: the medium and the materials will become colder and colder; less feeling; importance will shift toward interesting lighting; good for photography since it will make our job easier.

In reference to the issue of future instructional requirements (Question 12), the Industry comments included: political awareness and lobbying; knowledge of electronics; graphic design and photography will become one; ability to be a craftsperson as well as a business-person; better productivity will lower cost of production; general up-dating; knowledge of editing. The limited student responses included the following: we will require the skills to deal with competition; better business skills; 3D halographics.

When asked their opinion on the ability and/or appropriateness of academic institutions to provide courses on the topics identified above, the results of the analysis produced a significant difference ($p<.002$) between the two groups (Table 19).

Table 19

Comparison of the Two Survey Groups and Their Opinion on Specialized College Programs Providing the New Skill Required to Keep Up-to-Date

Opinion	Student population 62	Industry population 52
Agree	52 83.9%	29 55.8%
Undecided	9 14.5%	17 32.7%
Disagree	1 1.6%	6 11.5%

Chi-sq = 11.77, df = 2, p<.0028

Participation of Industry

The Industry sample was asked if they would consider participating in a cooperative educational program or internships sponsored by their companies. Over 50% of the respondents answered positively, while many of those who were unwilling to participate apologized and explained their reasons. The most frequently used apology was the limited size of the company. The Student survey resulted in 93% of the sample indicating yes with only one respondent yielding a no vote and three who did not respond (Table 20).

Table 20

Response to Cooperative Educational Programs

Opinion	Student population 62	Industry population 52
Yes	58 93.6%	28 53.9%
No	1 1.6%	18 34.6%
Missing values	3 4.8%	6 11.5%

The final question on the industry survey dealt with whether or not the participants would be willing to become involved in an advisory board to the college. The result yielded a 53% willingness to help the program in an advisory capacity while only 34% were unable or unwilling to participate; thirteen percent did not respond.

Internal Soft-Data

Student Perceptions on Issues Related to the Functioning of the Program

The student sample was asked to indicate levels of concern on a number of academic and non-academic issues. This list included the length of the program, the cost of the program, home responsibilities, job responsibilities, general comprehension, and the curriculum. They were

asked to rank their level of concern using a three point scale (1= little concern to 3=critical).

When asked about the length of the photography program (i.e. too long or too short), 61% stated it was of little concern, while 6% held it as critically or very important. In response to the question on the cost of the program, 41% stated it was critically important, 33% viewed it as important, while 10% believed it is of little concern. Home responsibilities were of little concern for 40% of the sample, while 38% saw them as important and only 15% held this as critically important. Job responsibilities, on the other hand, were critically important to half of the respondents (50%); 29% viewed this as important and 17% were not concerned with this issue. In response to the question of general comprehension the majority or 41% were not concerned, 25% saw it as an important concern, while an equal number saw this as a critically important issue. The curriculum itself was viewed as a critically important concern by 42% of the student respondents. The remainder of the sample was split between viewing it as important (24%) and of little concern (23%). (See Table 21 for a summary of the results.)

Table 21

Academic and Non-Academic Concerns of Students

	No Problem	Little Concern	Important	Very Important	Critical	Missing Values
Length of program	16	22	18	2	2	2
	25.8	35.5	29.0	3.2	3.2	3.2
	61.3			6.4		
Cost of program	1	6	21	23	9	2
	1.6	9.7	33.9	37.1	14.5	3.2
	11.3			51.6		
Home Respon-sibilities	7	18	24	6	4	3
	11.3	29.0	38.7	9.7	6.5	4.8
	40.3			16.2		
Job Respon-sibilities	6	5	18	22	9	2
	9.7	8.1	29.0	35.5	14.5	3.2
	17.8			50		
General Compre-hension	14	12	16	12	4	4
	22.6	19.4	25.8	19.4	6.5	6.5
	42			25.9		
Curriculum	6	9	15	16	11	5
	9.7	14.5	24.2	25.8	17.7	8.1
	24.2			43.5		

N=62

The data were restratified into the original groups and analyzed using the Chi-square statistical test ($p<.1$). No significant difference was found. It may, therefore, be said that the student sample is made up of two

homogeneous groups with no significant differences between them. And the results may be generalized to the two student samples.

Final Comments

The final part of this survey allowed students to document any comments they felt they had not already made in the other sections of the questionnaire. Many students took the opportunity to write a few words on issues that have been on their mind for awhile or brought forward by the questions on the survey. The comments were reviewed and summarized, resulting in some trends. There were quite a few complaints about the size and condition of the physical facilities. There were also complaints about the lack of sufficient equipment. A call for some form of internship or cooperative education as well as greater flexibility in the curriculum specializations (i.e. workshops, seminars, etc. on specialized areas of photography not covered in the program). Appendix (G) includes quotations that were particularly unique or otherwise interesting.

CHAPTER 5

Discussion and Conclusions

> Education itself may be viewed as a process for providing learners with (at least minimal) skills, knowledge, abilities, and attitudes, so that they may live and produce in our society when they legally exit from our educational agencies. . . . The behavior and achievements of learners as they function as citizens in today's and tomorrow's worlds determine whether the required outcome has been achieved. (Kaufman, 1988, p. 25)

This thesis and its survey instruments were designed to collect information on specific issues concerning the validity of the current system. The above quotation suggests the measurement of validity rests in the external viewpoint and functioning of the system's output. The aim of this chapter is to present the results of the questions posed in chapter one (p. 8 & 9). In so doing, it will indicate how the current system compares to the expectations of the community it directly serves and where it falls short in fulfilling this mandate.

The needs sensing data gathered and analyzed in the results section are important in describing the perceived reality to issues of values and choices. This final chapter will combine these results with the hard data collected from the census and institutional records, to provide a global picture. From this it will be possible to suggest planned interventions to bring the results of the system closer to its "ideal" state.

Needs of the "Referent Externals": Moving Outside-In

Performance Assessment of the Graduates

A major area of identification for a needs assessment is dealing with the outcomes of the system. In this case it is the industry's opinion of the system's output: what is the quality of the Dawson graduate as compared to other applicants? It appears that the majority, 65%, of the individuals who have hired graduates of the Dawson Institute of Photography gave them an evaluation rating of average. Only 19% held the opinion that they were better than average, while 7% believed they were less than average employees.

The industry respondents were also asked to list their observed areas of dissatisfaction with job applicants. Over 40% cited "attitude" as the greatest problem and 32% mentioned unrealistic job expectations. It appears that these two are closely related since unrealized expectations often result in resentment and a lack of interest; sentiments that were expressed when describing poor "attitude". Lack of prior job experience was reported by only 13% of the industry respondents.

These results are interesting in that they suggest what is identifiably a problem, has little to do with the knowledge and/or skills possessed by the job applicant: evidenced by few accounts (27%) of shortcomings in this area which may be interpreted in one of two ways. That is to say, applicants either demonstrate a satisfactory level of technical knowledge and skill or these skills are not essential requirements for gaining employment. The

former is more probable given the complexity of photographic technology and the potential loss of time to train a novice. Therefore, it is most likely that the greatest deficiency between what is required and what is available rests in that nebulous area of the affective domain.

Attributes that Increase the Potential for Success (as defined by Kaufman, 1988)

The industry responses to this question produced results that were consistent with those identified by the students. Hence, the objective was to match industry requirements with student perception. Both industry and students strongly believe that a firm foundation in the technical skills of the profession are the cornerstones of success. This is as it should be since it is the "raison d'être" of vocational training.

Even though both industry and students agreed on the importance of marketing and communication skills, the number of cases reported by both samples was consistently small. A discrepancy between the demand and the perceived requirement of creativity and/or talent was significantly different between the two groups. A greater number of students believed that creativity and talent were important attributes to possess and played a role in success. Industry, however, placed little value (11%) on these qualities. This might be explained by the notion that commercial photography is a business first and then an art form. As well it may reflect the belief that a solid foundation in the technical skills is the prime prerequisite which once attained, will eventually allow for other creative explorations.

The issue of prior job-experience also resulted in a discrepancy between industry's demand and the student's perception. Over 75% of those citing this requirement were from the industry group compared to 24% from the student sample. The classifications used by the industry sample were also similar to those discovered in Whitworth's (1983) findings. His study revealed three areas in which non-apprenticed graduates suffered major shortcomings: 1) unrealistic job expectations on the part of both students and employers, 2) lack of essential knowledge on the part of the student, and 3) the lack of work-place sophistication. The literature and this study's results are indeed interesting and may further explain the responses to the issue already identified; industry's complaints with job applicants. Over 70% of the industry sample cited some form of attitude or unrealistic job expectation as being the greatest problem.

The Notion of General Education (la formation fondamentale) Versus Vocational Skills and Knowledge

The results to this survey question revealed that industry strongly believes in general education (la formation fondamentale). The industry survey revealed that over 60% agreed that it is an important part of a vocational education. This finding is consistent with the on-going debate among educators such as Campbell (1980) who applauds the merits of a broader learning experience. He states that "employers...have indicated over and over again that occupational skills must be combined with basic skills and what have come to be called employability skills" (p. 30).

It also is consistent with the results of a Delphi study conducted by the Association of Canadian Community Colleges (ACCC). This research was collected from interviews with over 25 Chief Executive Officers, comprising a representative sample of community colleges and institutes that were members of the ACCC (Sinclair, 1988). Their main observation suggests that the role of general education is here to stay but may take on a different face. It suggests that the notion of generic (i.e. transferable) skills will become the new general education. "Increasingly employers will demand of . . . [graduates] the ability to use values in their work, to communicate well, to reason well, etc. -- all hallmarks of some exposure to a liberal education. The struggle for colleges will be to affect the blend" (p. 56).

The student's survey, on the other hand, resulted in a split decision on the issue of a Liberal Arts education, with 43% agreeing to its importance and 37% disagreeing. It is apparent that industry is much more decided upon the usefulness of general education than is the student sample. This is evidenced in the numbers of internals who disagree with the statement; 82% were students while industry accounts for 17%.

The recent works of Ricard (1991) support these findings. He reports that while the industry partners view general education as important the students expressed dissatisfaction with their course content. In reference to industry he states, "dans plusieurs secteurs techniques, les employeurs demandent aux diplômés d'être capables d'avoir une vue globale d'un problème technique et d'apporter des solutions créatives. . . Ils demandent aux collèges de donner aux étudiants du secteur professionnel une

meilleure formation fondamentale" (p. 9). When discussing the students, Ricard finds that "plusieurs évaluations de programmes professionnels font ressortir le mécontentement des diplômés du secteur professonnel à l'égard des cours du général" (p. 6).

Specific vocational skills and knowledge. The data from the student survey indicate that they believe a fine arts education is important. Industry respondents also indicated their appreciation for a fine arts education in a photography program. These results are interesting since many commercial photographers do not possess formal fine arts or design training themselves. This agreement is encouraging yet conflicts with the results of a previous question where industry was asked to list the requirements for success. No prompting was provided and only 13% cited the importance of creativity. Granted, an art education does not always equate to creativity, however, it is generally an enhancement.

In reference to a science education, the comparison between the industrial partner and the student partner resulted in a statistically significant difference. A larger percentage of the industry sample believed that science education is required in the teaching of photography. What was more exaggerated was the difference between the external's and internal's levels of disagreement. Over 60% of the students disagreed with science education as opposed to only 17% from industry. Nonetheless, it is apparent that industry sees some value in a science education. A possible explanation for these figures was the influence of the lab subgroup who deal with photographic chemistry and sensitometry on a daily basis. Even

when the data were reconfigured along the axis of the industry subgroups, no difference emerged. The industry group is therefore intact and this opinion represents that of the whole sample.

The comparison between student and industry responses produced a significant difference when questioned on computer education. Over 50% of the industry population agreed with the inclusion of computer education, while only 32% of the students agreed. The student survey was more decisive in their disagreement. This is interesting since many clients and users of photography are already employing computer-based technology (e.g., The New York Times, Time, U.S.A. Today, etc.). It is even more surprising that students do not seem to appreciate the usefulness of this education. It is noteworthy that this same student sample recognized the changing nature of photography and its close affiliations with computers and digitization. Perhaps an explanation for this result would be the question's front-most position in the survey instrument. Yet another may be one of mis-interpretation. It is possible that the student sample viewed computer education in its traditional form and general manner, such as computer programming or the learning of computer languages (e.g. Basic, Logo, etc.).

In summary, a possible interpretation of these results may be that the student group misunderstood the word "program" as implied in the question. Their desire to participate exclusively in photography courses may not exclude their interest in other subject areas. Rather it may suggest . .t they are unable to distinguish between what is "education" and what is "training".

The Role of Industry in Vocational Education

In the past five years the available positions in the photography related fields have been declining as the economy becomes weaker (Statistics Canada, 1985-1990). Hence, the industry partner response was predictable. When questioned on this matter, they indicated that there are few job openings presently in photography. Some job openings exist in the areas of darkroom technicians and store managers. Traditionally, there has always been ready employment for graduates in this arena. It would further suggest that the lab component in the Institute of Photography's program is very important. Further study is warranted to identify what specific skills are required for these darkroom jobs and if these requirements are presently fulfilled by the college program.

In second place, albeit substantially less frequent, was the identification of job openings for those willing to be photographer assistants. This is not surprising since most studio photographers regularly have the need for some form of assistance. The records of the Institute of Photography's job bank support these findings and report an average of eight requests a month for the services of part-time assistants.

Outside of the two areas mentioned above, it is noted in the Institute's survey of graduates (1986) that approximately 37% are self employed owners of photography businesses (see Appendix D). They have opened photographic studios, professional photographic laboratories, or operate in a commercial free-lance basis.

Responses to the direct question of industry and college cooperation generally produced positive feedback. The anticipation of cooperation was

part of the hidden agenda of this study since the literature (as cited above) elaborates on the benefits of this model for vocational learning.

Future Trends in Photography

Half of the local industry partners believed that technology will create changes in the field of photography. Yet those that did respond affirmatively to the question were surprisingly unfamiliar with the technology. Their descriptions were vague and generally composed of the term such as "computers" and/or "video".

The student sample, on the other hand, supported the belief that there will be changes in photography due to technology. Yet, when specifically questioned as to the importance of computer education in their photography program, 41% of the AEC students agreed while only 24% of the DEC students agreed. This result sends mixed messages and may suggest that the AEC students are better informed; or it may be explained by the prior exposure to computer education that is available to recent high school graduates (the DEC students).

Program Evaluation: Looking Inside-Out

The Problems Impeding or Delaying Successful Program Completion

The length of the program. When questioned on the length of the program, the majority of the student (DEC and AEC) sample did not believe it was a problem. This is despite the fact that institutional records for the

photography program show that the average time taken to graduate is 6.5 semesters for DEC students and 5.5 semesters for AEC students.

The financial situation and work status. The survey results reveal that the cost of the program was definitely a problem to both student sample groups. This is probably not because of the actual cost of tuition which is based on government norms and does not differ from program to program. Rather this response is probably the result of the high cost of materials and supplies required for the program. The institutional records maintained by the Institute of Photography's bookstore (1990) documents that the average photography student spends approximately $750.00 each semester.

As a consequence of the cost, many students indicated that they must have part-time employment. Thus, their job responsibilities are a concern in the completion of their photography program. Additionally these findings may be explained by the higher than average age of the students resulting in greater numbers with families to support or students who are self-supporting.

The content of the curriculum. When questioned on the status of the curriculum content, approximately 40% of the students responded that they were experiencing some discrepancies between what is currently available and what they wish were available. They believed that a greater access to specialize would facilitate their potential to secure jobs after graduation. Further study into precisely what types of courses are in demand should be pursued. As well, different program designs should be investigated to

allow for this potential course specialization which is not possible under the current system.

Variables that Validates or Refutes the Existence of Two Photography Programs

It is interesting that even though the two student populations differ in age and educational backgrounds, there were no statistically significant differences between the groups. There were, however, some trends identified which are age and education dependent. The planning of any program modification should consider these factors.

Identification of the Needs

The Chi-square test revealed no statistically significant difference between either of the sample's subgroupings. Hence, both the industry and the student groups are homogeneous within themselves. This allowed the author to identify the gaps that exist between the "what is" and "what should be" with greater assurance of validity. The following are therefore the needs of the system:

1. An easily measurable need of the system is the gap between the current number of externals who have expressly rated the graduate as an average employee (65%) and the desired level of satisfaction. Additionally, the numbers of those placing graduates in the "better than average" category is currently 19% and should be higher.

2. There is a perceived gap between the on-the-job experiences required and those provided by the current system. Specific attention must

be paid to improving the attitudes and job expectations of the output. The gap between what is required or expected and what is currently offered has become too wide (collectively over 50% of the total 53 responses). Therefore, to close the gap students should be provided with on-the-job experiences, while maintaining the high level of technical training that already exist.

3. A gap exists between the priority placed on general education by the external partner and the non-placement by the student sample. The results suggest that students do not see the education of photography in a holistic manner. It appears that they would see the teaching of photography include the notion of photography and fine arts and not much else. They are also more consistent and decisive in their views and beliefs.

4. There exists a gap between the number of jobs available for graduates of the system and the number that should be available.

5. Another gap was identified between what is currently known or understood about the emerging field of electronic photography and what should be known. Hence, this identification is another representation of a typical Kaufman-like need. In addition, there also appears to be a gap between what the student sample perceives to be their future needs and what the industry sample believes will be their future needs. This possibly identifies another need; the gap between what industry believes and what their clients require.

Discussion of Possible Interventions

In order to accomplish the goals of this study, the next step would be to look at the identified needs and some interventions that have been illuminated by the industry's responses to the survey.

1. The percentage and the level of satisfaction with graduates of the Institute of Photography should be increased by the next graduating classes. In the Kaufman (1988) model this improvement would be measured in precise quantities. Therefore this study suggest that a figure of 75% be selected as the immediate goal for the issue of general satisfaction. Furthermore the improvement of those rating graduates as higher than average should increase to a 50% level within the next three years: this represents one full generation of students who could benefit from modifications (attitude improvement and realistic job experience) made to the program. These recommendations are somewhat arbitrary but, as discussed in Chapter two, this represents the limitation of the model.

2. One possible intervention to close the gap between the current state of unpreparedness and the required "real life" experience might be to provide this opportunity as part of this vocational education. Hungerford & Leidner (1982) suggest however that many industries do not appreciate the objectives and process of cooperative education. This has resulted in abuses of the system. In their studies, they disclose an inherent mismatch between what is taught or theory versus working fact. They suggest that there are marked differences in the philosophy of industry and education in that, "their goals and objectives are not the same and as a result their non-

academic input may be at cross purposes to the planned curriculum of the institution" (p. 27).

The literature also suggests that one of the more popular educational strategies used to moderate this situation is one of internship (Sink & Sari, 1984; Whitworth, 1983). This experience better equips the graduate for the realities of the work site. Whitworth's (1983) observations on the subject is that "faculty (should plan) to work closely with local industry to design programs that incorporate the apprenticeship concept. When industry and education do the training job together, the outcomes can be synergistic" (p.15). Further study into the practical implications of one of these solutions is required.

3. The major global recommendation of this study is that the role of general education should not be diminished in the regular college professional program (DEC). The recommendations from Brunette's (1984) needs assessment confirm this. He states that "in the natural rush to accommodate for these changing skill requirements, the importance of instruction in the fundamental concepts of particular disciplines and in the elements of general education must not be overlooked as coping mechanisms for the diverse socio-economic and technical changes taking place" (p.105). This gap must be closed by changing the attitude of the students.

It is apparent, however, that a substantial portion of the AEC student sample (75%) already possess this general education through some type of prior post-secondary diploma. For these individuals, a subject specific program such as the AEC is a more viable solution. The Association of

Canadian Community College's Delphi study (1988) supports this recommendation. The study reported that "older, more experienced students will (demand). . . stripped down programs reflecting the key component required for effective training" (p.52). Consequently, this author supports the viability of both programs in their ability to offer their clientele the type of education they require for successful completion of the program.

4. The institution has several possible interventions to close the gap between jobs available and jobs demanded: either it should increase the quality of its output so as to place a higher value on their services; or reduce the number of graduates; or finally it could provide these graduates with the skills to cope with the potential marriage of photography and technology.

Given the state of employment in the field and that 50% of the industry partners responded with little optimism of finding employment there is a moral dilemma: should the college continue to produce graduates who will also experience difficulty in following and surviving in photography? This philosophical question is not easily resolved yet it appears reasonable that the objective of self employment should continue to be a goal of the program. Since it is not possible to single handedly change the economic situation or the demand for photographers, it may be possible to look for areas in the field that are not currently saturated. One such arena would be found by looking forward.

5. The gap between what the industry currently knows about technology and what their clients are demanding may reflect several problems that exist in areas where the impact of technological advances is

slow yet steady. The visual arts and photography are at a turning point in their history. The commercial markets are moving toward the every day use of special effects imagery, that is, the manipulation of one or more images and text integrated to produce a final output. This output is visually superior and bypasses traditional methods in the total pre-press production time. A portion of this market is intrigued by the novelty of computer imaging technology. This is evidenced in the field of photojournalism where electronic photography is already being used for its speed. Not all elements of the community, however, are aware of the changes and some are resistant and afraid of the potential. Yet there are those who wish to see electronically aided photography used for its artistry, efficiency, and teaching potential. In support of this opinion is an article in Studio Magazine (January/February 1990) which reads as follows:

> What is critical over the next decade. . . is to upgrade the computer skills of teachers in the fine arts, and graphic arts, and to ensure that curriculums reflect the importance of computers in the graphic arts industry. There should be care taken not to confuse mere technical skills with real creative excellence, but rather to ensure that the education system is, if not at the leading edge of progress, at least somewhere in the race. (p.59)

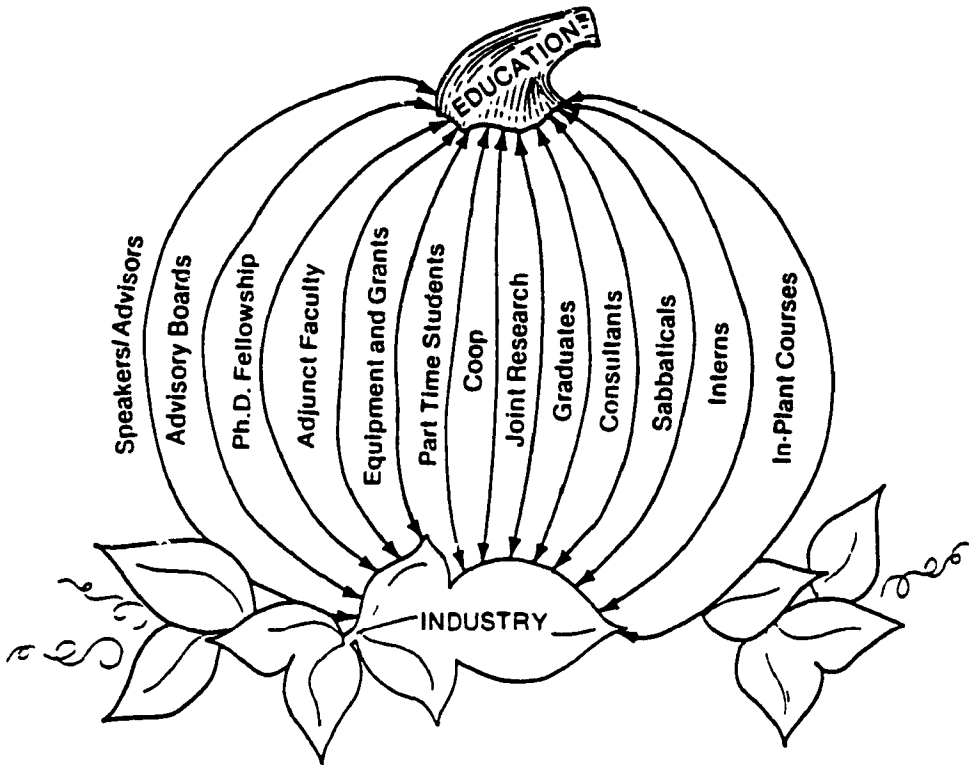
This leaves room for further study into the reasons why 50% of the photographic industry (i.e. studio, free lance photographers and lab technicians) do not have a better awareness of coming changes. Why is it

that photographers seem less willing to become involved with the technology? One hypothesis may suggest that the technology is too expensive and does not directly affect the picture taker. Another might be the innate fear of the artist for new apparatus: some similarities may be drawn between photographers of today and to the painters of the nineteenth century. The most promising and rewarding research would be based on the assumption that a new field was on the brink of its development and a new market demand is waiting to be filled. This would be the best news possible for the graduates of a photography program if they are trained to cope with these developments.

It is locally believed in this age of expanding information that educational institutions cannot keep up with technology (Whitworth, 1983). One intervention might be to encourage industry to make an economic and social commitment to educational institutions (Oliver, 1983; Wright, 1983; Whitworth, 1983; Modesitt, 1981). As an employee of Texas Instruments, Modesitt (1981) suggested a potential industry/education interface in the guise of "the great pumpkin" diagram in which he outlines 13 possible bonds that can be supported by the two partners (see Figure 3).

Figure 3.

The Great Pumpkin of Joint Industry and Education Endeavors.



Adapted from Modesitt, 1981.

Limitations of the Research

"Survey research. . . is subject to errors resulting from bias as well as from chance" (Morgan & Feldman, 1977, p. 50). The results from the photographic community were limited to the persons willing to answer the questionnaire. Within the limits of this study, there was no way to empirically determine if the individuals who did not return the questionnaire were in any way different from the respondents. From the level of response and the consistency of opinion, it is expected that there would be no significant difference.

To determine the consistency of the response patterns across the various sample subgroups, the data were analyzed using the Chi-square statistical test. However, the data belong only to the two groups (students and industry) and did not include the other system stakeholders: the end-users or photographer's clients and the graduates of the program. These groups are further subdivided into the main subgroups used throughout the analysis: students - DEC and AEC; industry - Studio and Lab.

In addition, the soft data resulting from the Alpha-level needs assessment opens up many questions yet does not gain sufficient information upon which to base summary decisions. Therefore it leaves room for further study at the Beta and Gamma levels.

Implications for Additional Studies

This original study has provided some direction for the future planning of the program at the Dawson College's Institute of Photography. It has supported the notion of general education in the career curriculum and has identified the need for changing attitudes towards this goal. It has reported a need for on-the-job experiences and leaves this as a possible area for future research. Furthermore, it has isolated a systemic problem of "poor attitude" on the part of the graduate, hence presenting a challenge for curriculum design since the problem appears to be systemic. The final issue that has been identified is one of the future needs of photography as it is affected by technology. Additional research into this subject would lead to interesting outcomes for the photography program and many of the others

that are faced with technological advancements and changing employment requirements.

This study has been successful in demonstrating that Needs Assessment may be effectively used as a tool to plan for the future of professional programs. It is the hope of this author that the College will endeavor to use it within the holistic planning that is currently underway.

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Appendix A

Dawson College

Enrollment Figures, Fall 1990

DAWSON COLLEGE

ENROLLMENT - FALL 1990

		NEW ADMITS	PROGRAM TRANSFERS	RETURNING	COLLEGE TOTAL	FALL 1990 PROJECTED COLLEGE TOTAL	FALL 1989 COLLEGE TOTAL (29-9-89)
200.01	Health Science	134	42	90	266	279	248
200.02	Pure & Applied	176	48	147	371	373	334
200.03	Preparatory	81	13	1	95	113	109
200.04	Developmental	70	6	0	76	84	73
TOTAL SCIENCE		461	109	238	808	849	764
300.01	Social Sciences	1329	116	1194	2638	2668	2671
300.02	Retailing	36	9	41	86	113	122
300.03	General Studies	2	38	0	40	0	10
300.04	Liberal Arts	61	0	29	90	97	71
300.07	New School	33	2	26	61	69	77
300.08	Access	42	0	0	42	44	44
400.01	Commerce	141	41	159	341	385	314
500.01	Creative Arts	212	40	222	474	488	399
600.01	Literature & Languages	76	11	71	157	141	148
TOTAL ARTS, COMMERCE & RETAILING		1931	251	1742	3924	3917	3854
TOTAL PRE-UNIVERSITY		2392	360	1980	4732	4766	4618
140.01	Medical Laboratory	37	14	58	109	108	107
142.01	Radiography	11	10	32	61	60	47
142.03	Radiotherapy	4	5	6	15	15	12
180.00	Nursing	61	53	137	251	235	244
210.01	Chemical Technology	12	12	27	51	55	40
221.02	Civil Technology	17	11	34	62	62	64
241.01/03/06	Mechanical Engineering	54	19	104	177	155	163
243.03	Electrotechnology	54	23	112	189	195	216
388.01	Social Service	35	10	35	80	70	85
391.01	C.R.L.T.	22	11	26	59	64	72
410.00	Business Admin.	74	33	117	224	256	218
412.02	Office Systems	30	13	61	104	98	106
420.00	Computer Science	46	30	97	173	183	182
500.04	Fine Arts	43	13	18	74	64	72
561.01	Professional Theatre	19	3	31	53	66	52
570.02	Illustration & Design	38	17	75	130	114	110
570.03	Interior Design	40	11	38	89	86	88
570.04	Photography	37	7	53	97	105	105
570.06	Graphic Design	35	16	68	119	112	114
TOTAL CAREERS		669	319	1129	2117	2098	2097
TOTAL PRE-UNIVERSITY		2392	360	1980	4732	4766	4618
TOTAL REGULAR DAY		3061	679	3109	6849	6863	6715
F.T.E.					6738	6729	6594

Appendix B

Report from the Conseil des Collèges

Report from the Conseil des Collèges

The Minister of Higher Education and Science has established an independent council (le Conseil des collèges) to study the issues affecting the status and needs of college education. This particular study "La résussite, les échecs et les abandons au collégial: l'état et les besoins de l'enseignement collégial Rapport 1987-1988" reflects upon the issues of success, failures and drop-out rates at the Cegep level. According to the council, success at cegep (defined as success in a course or success in studies) is affected by the following:

1. success in secondary studies.
2. the change from secondary to college.
3. organization of college studies.
4. motivation and aspiration.
5. financial situation and work status.
6. the learner.
7. college environment.

A little elaboration on several of these causes is necessary for a better understanding of the problem. On the claim of academic ability, many studies suggest that there is a direct correction between success in secondary schooling and success in college (Morishita, 1986; Talbot, 1987; Weber, 1983). These reports state that poor study skills account for this unsatisfactory performance. Furthermore, language skills are said to be a decisive factor in success, therefore students with a solid foundation in their written and spoken language have a distinct advantage.

The shock involved in the transfer from high school to college appears to be lessened if the student is provided with a through orientation to the program in which they have enrolled.

Many students experience great difficulty adapting to the three semester division of the school year. When they fall behind in the first few weeks of the semester they find it impossible to catch-up. In other words, they are unable to adapt to the course length of 15 weeks; one semester.

The Conseil des collèges also blames the low ratio of successful completions (withdrawals, incompletes or failures) on the programs which make their course work to heavy thereby creating difficulties for the student to succeed. As well, it identifies the attitude of a good number of professors that place total emphasis on the specialization courses. They also claim that the schedules that are established by the programs favor the taking of complementary courses only in the final year.

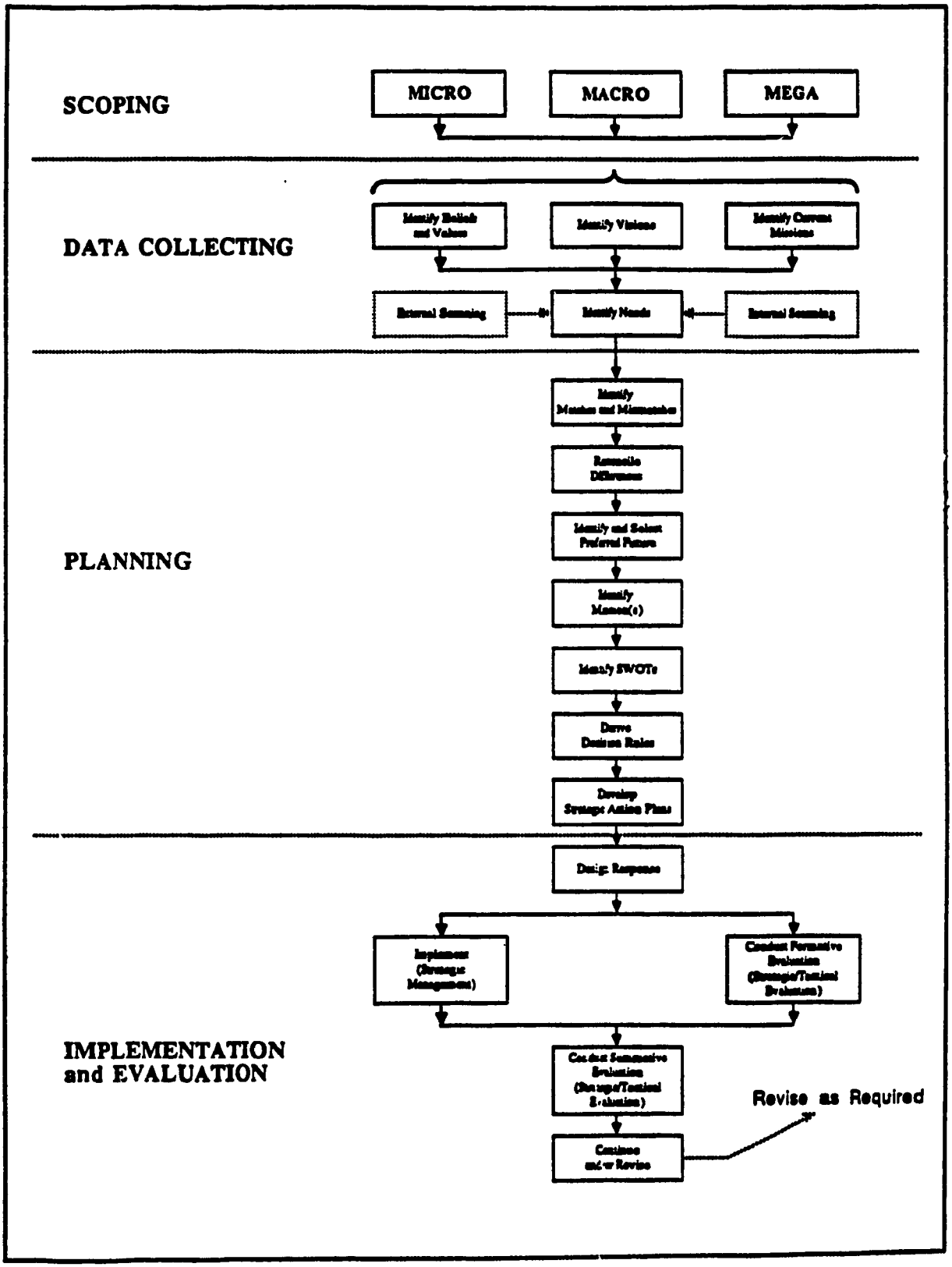
> "De façon générale, les éducatrices et les éducateurs des collèges son d'avis que, dans l'ensemble, la charge de travail qui est demandée à l'élève est tout à fait acceptable. Ils n'en croient pas moins que, dans plusieurs programmes de l'enseignement professionnel, la charge de travail est trop lourde." (Conseil des collèges; Commission de l'enseignment professionnel, 1986, p.28)

Appendix C

Kaufman Four-Phase

Strategic Planning Model

A Four-Phase 13-Step Strategic Planning Model
(Based on Kaufman [In press]; and Kaufman & Herman [In press]. Used with permission)



Appendix D

1986 Survey of

Dawson Institute of Photography

Graduates

Survey of Dawson Institute of Photography

Graduates 1986

Sent	191
Returned	88

Full-time Freelance-Commercial	24
" " " - Industrial	4
Full-time Assistants	7
Full-time Lab Technicians	7
Photo Sales - Manufacturer's Rep.	7
Teachers-Photography	7
Owner of Portrait Studio	5
Medical Photographers	2
Photojournalists	2
Industrial Photographer-In House	2
Audio-Visual Technicians	2
Museum Photographer	1
Photography Critic (The Gazette)	1
Photo Administrator	1
Art Director-Advertising	1
Part-time Photographers	11
pursuing further studies in:	
Journalism	2
Architecture	1
Fine Arts	2
Commerce	1
Political Science	1
Video Technology	1

Not involved in photography:	4
Enrolled in the armed forces	1
Computer Technician	1
Graduate Student	1
Travelling	1

Appendix E

Industry Needs Assessment

Questionnaire

Dear colleague:

Further to our conversation, the Dawson Institute of Photography very much appreciates your time and cooperation in completing the enclosed questionnaire. The purpose of this survey is to help us to better understand the industry's needs for training, information, and/or research.

We believe that the field of photography is at a turning point and the future holds both the challenge of understanding technological advancements as well as the need to explore their impact on our industry. It is our hope to improve the communication between the business of photography and ourselves, the educational institution. The information obtained in this study will play a significant role in curriculum and program planning and we encourage and welcome your comments and suggestions.

Thank you for your participation.

Sincerely,

Liz Charles,
Survey Coordinator.

Please return this questionnaire in the enclosed self-addressed, postage-paid envelope as soon as possible to the Dawson Institute of Photography, 460 St. Catherine St. West, suite 700, Montreal, Quebec, H3B 1A7.

Dawson Institute of Photography
Industry Needs Assessment

Please return this questionnaire in the enclosed self-addressed, postage-paid envelope as soon as possible to the Dawson Institute of Photography, 460 St. Catherine St. West, suite 700, Montreal, Quebec, H3B 1A7.

1) In your opinion, should the teaching of photography also include the following subjects: (Circle the number that shows your opinion on each subject.)

	Agree	Undecided	Disagree
a. liberal arts education	1	2	3
b. fine arts education	1	2	3
c. science education	1	2	3
d. computer education	1	2	3

[Comment]_____

_____

2) Which of these best describes your business? (Circle one response.)

a. photographic studio.
b. freelance photographer.
c. photography department: corporate/institutional.
d. photographic lab
e. other _____
(specify)

3) Including yourself, how many individuals does your company presently employ?

Full-time _____ Part-time _____

4) What type of photographic work does your company specialize in?

_____

_____

5) Within your industry, what are the jobs for which there is a regular or high demand (openings)?

_____

_____

6) Please rank the following qualifications according to their importance for a career in your field of photography. The most important should be assigned the number 1 and the least important the number 4.
(Fill in the number in the space provided.)

most important .....least important
1 2 3 4

_____ specialized three year CEGEP diploma in photography (D.E.C. or A.E.C.)

_____ Bachelors degree in photography (B.F.A.).

_____ photographic experience other than academic training.

_____ general employment experience.

[Comment]_____

_____

7) Have you ever hired or interviewed a graduate or student of the Dawson Institute of Photography?

a. yes b. no (if no go to question 9)

8) In your opinion, how did this individual(s) compare to other applicants or employees? (Circle one response.)

a. better than average.

b. average.

c. poorer than average.

9) Please list the biggest complaint(s) you have had with regards to the qualifications of job applicants?

_____

_____

_____

10) Within your business, do you perceive any changes in occupational or job trends due to technological innovations or other factors (e.g. results of free trade, etc.)? (Circle your response.)

a. yes b. no (if no go to question 13)

11) Please describe these changes.

_____

_____

_____

12) What new skills or knowledge, if any, will be required for these jobs?

_____

_____

_____

_____

13) Specialized college programs (e.g. certificates, workshops, in-house training, etc.) could provide you or your employees with the new skills required to meet your future business needs. (Circle one response.)

a. strongly agree.
b. agree.
c. undecided.
d. disagree.
e. strongly disagree.

14) Would your company consider participating in college programs such as co-operative* learning or professional internships/stage?

a. yes b. no

[If no could you state your reason(s).]

_____

_____

(*alternating periods of full time study and full time work.)

15) Would your company consider participating on an advisory board for college program planning?

a. yes b. no

16) Do you have any additional comments which might assist the Dawson Institute of Photography in planning for the future?

_____

_____

_____

_____

_____

_____

Would you like a copy of the survey results?

yes no

Please return this questionnaire in the enclosed self-addressed, postage-paid envelope as soon as possible to: the Dawson Institute of Photography, 460 St. Catherine St. West, suite 700, Montreal. Quebec, H3B 1A7.

Appendix F

Student Needs Assessment

Questionnaire

Dawson Institute of Photography
Student Needs Assessment

Program _____

1) In your opinion, should the teaching of photography also include the following subjects? Use the scale below to rate the importance of each type of education. (Fill in the rating number in the space provided).

Disagree	Undecided	Agree
1	2	3

a. liberal arts education ____
b. fine arts education ____
c. science education ____
d. computer education ____

[Comment]_____

_____

2) Circle the total number of courses you are registered for this semester (include only courses taken at Dawson College.)

1 2 3 4 5 6 7 8 9 10 11 more

3) What age group do you belong to?

a. 18 and under
b. 19 - 25
c. 26 - 35
d. 36 - 45
e. 46 - 55
f. 55 and over

4) Do you already have a post-secondary degree?

a. Yes
b. No

If yes please identify the degree. _____

5) List what you believe would be the most important skills and/or knowledge required for success in photography.

_____

_____

6) Using the following scale, rate the importance of each of the following types of education or training. (Fill in the rating number in the space provided).

No bearing on success	Little importance	Important	Very important for success	Crucial for success
1	2	3	4	5

a) A specialized CEGEP diploma in photography (D.E.C. or A.E.C.) ___

b) A Bachelors degree in photography (B.F.A.) ____

c) On-the-job photographic experience ____

d) A combination program of education (Diploma) and on-the-job training ____

Comment

_____

_____

7) In your opinion, do you believe that there will be changes in the field of photography due to technological advances?

a. yes b. no c. don't know

(If you answered yes to the above question please continue.)

Describe these changes and any new skills that may be required.

_____

_____

_____

8) Do you believe that specialized college programs (e.g. certificates, workshops, etc.) could provide you with the new skills required to meet your future career needs? (Circle one response.)

a. strongly agree.

b. agree.

c. undecided.

d. disagree.

e. strongly disagree.

9) Would you consider participating in college programs such as co-operative* learning or professional internships/stage?

a. yes b. no

[If no could you state your reason(s).]

_____

_____

(*alternating periods of full time study and full time work.)

10) What are your biggest concerns in taking this program? Use the following scale, to rate the importance of each of the following. (Fill in the rating number in the space provided).

No problem	Little concern	Important	Very important	Critical
1	2	3	4	5

a. Length of time it takes to complete the program ____
b. Cost of the materials needed for the program ____
c. Home responsibilities ____
d. Job responsibilities ____
e. General comprehension ____
f. Curriculum content ____

Comment

_____

_____

12) Do you have any additional comments which might assist the Dawson Institute of Photography in planning for the future?

_____

_____

_____

_____

_____

_____

Appendix G

Specific Comments from the Surveys of Both Sample Groups

Specific Comments from the Surveys of Both Sample Groups

Comments From the Industry Survey

The final part of this survey allowed the Industry respondents to make any comments they had not in other sections of the questionnaire. The comments were reviewed and summarized. Some trends were revealed, the most frequent being the following: (1) Increased emphases should be placed on the teaching of business management, entrepreneurship, marketing, communication skills (e.g. letter and proposal writing). (2) All efforts should be made to improve the students' awareness of the real life in photography (i.e. include internships or other type of no-the-job training). (3) Expand curriculum to include more fine arts and art appreciation - broaden the students' exposure to art education. (4) Expansion of the curriculum to include more video production and knowledge of computers.

Only quotations that were particularly unique or otherwise interesting are included below:

1. Congratulations! For the first time someone asks the right questions.

2. The business aspect accounts for 70% of the success in photography.

3. (The schools) should be turning out less student's but of better quality, for them to have a fighting chance.

4. Too many people are attached to our business due to (the) 'glamour' or 'high salary expectations'. A very small percentage deals with glamour or are paid excessive rates... drive and determination are factors which few possess; students must realize that once employed they are required to meet 'deadlines', work diligently, precisely, and concentrate on (the) job at hand. (They must also) take pride in what they do even if it's boring at times.

5. Ils doivent rèussir à se vendre et vendre leurs photos. Training in marketing and administration is a must. "Too many photographers start up businesses only on technical knowledge and they die.." "conservative salary expectations".

There was only one respondent that chose to write a negative comment in the closing section. The following is taken from his statement: " In 1986-7 my replacement at the same (organization) was a DIP student (who) dazed all ... with his masterful studio technique and (he too) could not develop Plus-X (film)!"

Student Survey Comments

DEC Student Comments

1. (There) are too many courses for students to graduate in three years. Students should be told that the program will require them to take summer courses or spend three and a half to four years to complete the program. It is just too much responsibility on someone of this age (17-19 years).

2. Ask (the Minister of Education) to take into consideration that costs of a program like photography, arts, med. school, etc. are more than a program where a student only needs to buy a few books. The Institute not only needs more equipment, but more functional equipment.... Our equipment is falling apart!! It's old! we need the new technology!... Bursaries and loans (must be made available). Administrator of (the) school must help students with (the) fight to get more. No money, no students, no school.

AEC Students Comments

1. I think that the AEC in photography is a little short. There are so many techniques to learn and practice in such a short period of time.

2. Keep encouraging student feed back and keep up with the good work.

3. Overall this is a very good program.

4. Upon completion of this program, it seems that I will be numb with boredom over the amount of portraiture inflicted upon me.

5. Un bureau de placement pour travail, evidemment, sur lequel on pourrait se-referer même âpres des annees.