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A Needs Analysis and Evaluation of Job Skills Required by Educational Technology Graduates

Penelope Hooper Colville

A Thesis

in

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ABSTRACT

A Needs Analysis and Evaluation of Job Skills
Required by Educational Technology Graduates

Penelope Hooper Colville

A needs analysis and curriculum evaluation was conducted with a large sample of the graduate population of the educational technology program at Concordia University. The objective was to provide information to future degree candidates relevant to selection of curriculum concentration and elective choices. Issues surrounding these choices are of particular interest since a new non-thesis option and other curriculum changes had been approved for the following year. It was discovered that graduates do not use as many production skills on the job as had been anticipated; that instructional design jobs tend to be entry-level, relatively low paying jobs; and that many graduates enter or want to enter management level positions within a few years of graduation. Management and communication skills are highly valued and are being actively sought by many alumni. The diversity of the program's curriculum is considered its greatest strength. It seems the focus in professional preparation should remain, or become even more, 'generalist'...

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My advisor Dr. Richard Schmid deserves all my gratitude for his good humour and unwavering moral, political and financial support in this endeavor and during other difficult times.

I would like to thank my sister Jacqueline for her gift of freedom.

In appreciation of my daughter Claire, I hope she will soon share in the rewards of this achievement since she knows better than anyone the price.

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INTRODUCTION

The Master of Arts (Educational Technology) Program at Concordia University was designed to produce certain educational outputs: among them, professionals with generally described configurations of competencies for the social roles anticipated. Since its implementation in 1968, developments in the profession at large and shifts in demand for certain skills have resulted in refinements and changes in emphasis within the curriculum. The faculty has continued to set goals, alter core requirements, set up special interest programs and model the professional and social roles for educational technology practitioners. However, these activities have ensued in the absence of a formal a) needs assessment, b) evaluation of educational outcomes or c) description of the graduate population. Insofar as it is possible to formally assess the outcomes of Canada's only anglophone graduate program in educational technology, 19 years after the program was introduced is not too soon to address the question of how both the short term and long term goals of the program are being met . A follow-up study was needed to provide more accurate feedback on the graduate population and for helping current and future students make more informed decisions on options and concentrations. Planned and unplanned outcomes needed to be identified and assessed. Such a study would produce a description of the current situation and be the basis for student evaluation of program projections about career tracks.

Individual users of the system could use this information on graduate careers to evaluate their response options within the educational technology curriculum. In fact it can be argued that the individual can respond faster than the institution to information on outcomes, and therefore study results are primarily directed to the student body. The evaluation was directed to discuss curriculum issues and concerns in a manner and language appropriate for them. Therefore this study borrows methods from both quantitative and qualitative evaluation: long term follow-up techniques and responsive evaluation methods.

This study proposes to satisfy the needs of the Master's candidates by providing facts on a large sample of the population of graduates and quasi-graduates (defined later). Information on the graduate population, their attitudes, opinions and perceptions

relevant to the professional preparation of educational technologists and the program itself are discussed. Data on graduate history, program profile, job description, valued skills and where they were acquired, and measures of social, career and program satisfaction are used to produce the material for a guide to the Master's program for future candidates. The product is envisioned as informative rather than instructional and its goal is to assist curriculum decision-making at an individual student level.

PROBLEM STATEMENT

Given the methodological basis of educational technology (and this is evidenced in the program's curriculum), the program should be viewed and treated as a system. Once a system is functioning it has outputs and outcomes. Outcomes are the results of any intervention or process which are achieved through a system's outputs (Kaufman 1979). In an educational system graduates are one kind of output, and the social outcomes expected by the educational system will, in large part, be achieved through them. Outcomes are intended; they are designed. Feedback on the actual outcomes is essential to the proper functioning of the system, since the effectiveness of any organization is ultimately measured by its external results. Regarding the program as an educational system has a number of implications for the process of curriculum development. The closing of feedback loops with information on the survival of graduate outputs and the needs and problems in their environment is critical in these contexts. An educational system must be able to determine what the extent of its influence has been in shaping the environment, as well as judge if, how and when to respond in order to prepare future graduates for expected situations.

The outcomes of an educational system associated with human outputs are usually expressed as survival and contribution of the outputs in the social environment (Kaufman, 1979). The outcomes of the program have been generally defined in the form of goals, as have role expectations for practitioners (Mitchell, 1981). The educational technology curriculum is modeled around these goals and projections. Information gathering on outputs is conducted by the program as in any educational system - as a matter of course - but rarely consists of more than internal measurements about performance relative to standards based on desired outcomes. Internal assessment is always necessary for quality control of outputs but does not constitute an external referent.

Some external referents regarding the success of the Master of Arts (Educational Technology), specifically information on actual outcomes, are available in various forms and are already used in evaluation of the program, for educational decision-making and to inform students. The most objective, external and formal source is a program

evaluation conducted every six years by the Board of Graduate Studies, in which programs are carefully described and rationalized. However, the outcomes examined are global, do not address specific content of the curriculum and do not describe the population in great detail. Some information is regularly documented by the Education department, such as the number of applicants to programs and the number of drop-outs, as empirical indicators of success or failure. The last known jobs of 99 graduates and some rough characterization of these occupations have been compiled (M.A./Ph.D Appraisals Dossier, 1985). The number and value of accepted grants and the number and placement of publications are also concrete measures of the impact of the program within the field.

Other forms of feedback on outcomes are channelled informally through faculty. Contacts through internships and jobs of former students that result in contacts for internships and jobs for current and future students keep faculty in some manner aware of the activities and needs of practitioners and the demands of the environment. Contacts through research projects, the activities of the Ph.D. Advisory Board, contact with students, keeping up with the literature and discussion among colleagues outside the program all constitute sources of feedback for the educational system. What limits the usefulness of this faculty-centered feedback to the curriculum development process is that it exists in individuals rather than the collective. It has not been formally described or shared among faculty or with students specifically for the purpose of curricular decision-making, either at the institutional or personal planning levels.

Research of the type designed to provide measures on the program's outcomes makes sense in a systems approach to education. Evidence of exactly how, and in what capacities the program's alumni have survived and contributed would be of great use not only to those anticipating a personal career, but also to those engaged in the on-going development of degree requirements as they relate to the broad long-term aims of the program's designers. If it is expected that a rapid growth field like educational technology must always and only address future needs, it would , at the very minimum, be useful to know about the obsolescence of courses from the vantage point of nearly twenty years of operation and evolution. It has been argued that the usefulness of studying practitioners is limited at best: seven years after Concordia's educational

technology program was set up there was

"...still no clearly defined set of roles for educational technology (therefore) it would be confusing to study existing functionaries in order to identify role expectations for practitioners. Moreover to focus entirely on the educational technology of today would limit one's vision to past and traditional practices rather than to sensitise one to the assessment of needs and possibilities"(Mitchell 1975).

P.D. Mitchell quoted above, was also a chief engineer of the educational technology program at Concordia. In The Discernable Educational Technologist (Mitchell, 1975) he formulated a conceptual framework of roles from a review of the literature pertaining to professional activities in the field. The model curriculum developed for the program was the result of a "solution-oriented normative approach to the identification of conditions conducive to the professional development of educational technologists" (Report to the Board of Graduate Studies 1985, p.88) The curriculum necessarily grew from a theoretical base, and it is not uncommon that it would be modeled without a formal needs assessment. "A defined theoretical base is crucial to understanding variables at work in the real world and to utilizing the feedback of results when a process has been applied" (Kaufman 1979, p.124). Formal provision of feedback on the outcomes of this process is the intention of the proposed study, since what improves student performance will enhance program success.

No goals, personal or institutional, immediate or future can be reached by graduates inadequately prepared or insufficiently motivated to take and strengthen desirable positions in the field. So the immediate concerns of the educational technology graduates and their individual development are linked in this manner to the overall and long-term social goals of the program designers and curriculum developers. The broader social needs have been anticipated by the program engineers, and there is some evidence that the needs of employers have been taken into account. However, a careful survey of occupations, a detailed probe on program satisfaction, and a demographic characterization of the program alumni have not been done. It was felt that students found the consequences and criteria for selection of a "self-designed curriculum" was not evident enough within the present program, and that a study such as this could put the

issues into relief.

The proposed study is warranted because the aims of the program depend a great deal on issues of professional preparation and personal satisfaction. Educational engineers of a graduate program in applied arts must be concerned with career development issues, specifically career development philosophy. The philosophy of career development

> "...is equated with belief systems, assumptive bases, presuppositions and propositions which will guide decision-making. Philosophy must present beliefs about the desirability of and responsibility for such factors as development of marketable skills, development of learner attitude, values and knowledge about themselves and the work-leisure world. Philosophy takes into account the career decision-making element and the placement function" (Ryan, 1973, p.31)

Students also have a concomitant responsibility for their professional development and this responsibility may be more widely and readily accepted if the surrounding issues were better understood. This may be accomplished in part by the kind of guidance document this analysis will produce.

The need for a study addressing student concerns was identified in 1983 when student representatives, including this evaluator, drafted several versions of a questionnaire about the relative value of program components and general program satisfaction. At that time currently enrolled students were invited to respond. However, the representatives' various other commitments prevented the study from being implemented. Since then it was realized that concerns arising in conversations with colleague-students were related to various personal post-program aspirations. A study of graduates was called for since it appeared student decision-making about the relative worth of program features was based largely on hearsay about graduate experiences and faculty-digested impressions of occupational situations.

Obviously , much more complete information about the educational technology experience could be derived from a detailed survey of the graduate population, with a report directed to issues and concerns arising from an analysis of these data. Generalization of these evaluation claims must be made by the individual student decision-maker. Informed by the results of the evaluation, a student is better able to clarify his/her position with regards to the 'multiverse' of values and outcomes described, and identify congruence between his/her profile of aspirations and those career profiles described. It is hoped that the curriculum selection process could then be enlightened.

SELECTION OF AN EVALUATION MODEL

Evaluation literature, specifically needs assessment theory, includes among other important criteria, the requirements of the user in the environment as the basis of educational decision-making about the services to be provided. (Coffing, 1977; English, 1977; Kaufman 1979; Lee 1973; Sarthory 1977; Stufflebeam et al, 1985). Kaufman (1979) in particular asserts that an external referent should be the starting point for functional and useful educational planning, design, implementation and evaluation. Lee also stresses the needs of the client; "an important principle in human systems is that those who receive from the system should participate in determining what those services should be" (1973, p.29). In this case, although evaluation techniques may be used for decision-making about the 'services' to be provided, the primary objective was to produce information useful in determining the 'services' to be sought. At the student level, details on educational outcomes would enrich the meaning of current program options, so that more informed curriculum choices are possible.

Educational outcomes must be studied from the perspective of practitioners in order to compare them to currently held beliefs about career expectations. The M.A. candidate has rough expectations of the degree from the university graduate calender, which from year to year deviated little from the following aim expressed in the 1982/83 edition:

> "The intention of the program is to introduce a high degree of professional and academic competence into the rapidly developing field of educational technology. The program qualifies people for careers as learning consultants, producers and evaluators of educational media, instructional materials and systems, managers of learning resources and educational planners."

And it is claimed the Master's program "is designed to prepare educational technologists for work in educational institutions, corporate and industrial training, the media and human resource development." (Graduate calendar. 1982/83) The follow up study has been designed as one means of evaluating how these goals have been met, by gathering detailed information on occupations and personal satisfaction.

contribution, can be sought with the intention of establishing directions for career aspirations. Valued skills for career tracks could be illuminated, whether these are offered in the M.A. program or not. However, the various and possibly conflicting value systems involved have strong implications for the type of evaluation report that would be selected. Models for evaluation are offered in fields such as operations research (Ackoff and Sasieni, 1969) but were rejected in favor of models that would naturally produce reports comprehensible to early Master's candidates. In evaluating evaluation models it had to be determined what kind of information was useful to whom: how program outcomes should be described. The move in naturalistic evaluation is towards a methodology of responsive evaluation, which involves both description and valuing or judgment (Guba & Lincoln, p. 36). In many respects responsive evaluation compares well to other types of inquiry for this problem.

Early evaluation models failed to distinguish the act of measurement from the act of evaluation. Tyler changed this (1971,1974) by basing it straightforwardly on the concept of objectives, but failed to address the question of how to evaluate the objectives themselves (Guba & Lincoln, p.6). Stufflebeam's (1971) Context-Input-Process-Product (CIPP) model was based on decision types; it was progressive in that it modeled context evaluation as an on-going activity, and allowed evaluation to be organized around propositions other than objectives. It's problem in Guba and Lincoln's view is that it addressed merits to the exclusion of values (p. 16), a distinction elaborated on later. Scriven (1974) proposed goal-free evaluation, comparing actual effects to a profile of needs, making it both possible and theoretically desirable to conduct an evaluation in the absence of any knowledge about objectives. However, students "needs" are difficult to disentangle from their objectives, and so this could be viewed as a power shift from the educational system designers to the "user" or learner party. It was refreshing, apparently, if contentious. The major problem Guba and Lincoln (1981) cite is the failure to guide on what effects to look at, and what needs to be investigated.

Merit and worth have a special meaning for Guba and Lincoln: merits are distinguished as intrinsic to the entity being evaluated, while worth is extrinsic (p. 45), and these may be compared as follows.

thesis and thesis-equivalents and varying course content for courses of the same name have been part of the ordinary evolution and behavior of the system for the past 18 years. There have been certain manifestations of the program but none of them long-lived enough to study discretely, and there are other variables: no student necessarily enters with the same degree; certainly few have the same career tracks in mind. In addition to the variety resulting from curriculum changes, the possibilities inherent in the program with its self-designed components guarentees that no one leaves with the same configuration of competencies as anyone else. Clearly, it is especially true of this program that a large measure of responsibility for the appropriateness and even completeness of professional preparation belongs to the student. The standard needs assessment models investigated are not very appropriate for a study aimed at assisting individual curriculum decision-making.

Another category of concern is whether graduates recognize and are disposed to take advantage of opportunities to advance the profession. Romiszowski points out the lack of formal studies that go beyond a concentration on mastery of course content. "Great lip service is paid to motivating, interesting and developing attitudes. Less is done about formally evaluating these outcomes." (1981, p. 376) He also dismisses the reliance on the benefits of the 'hidden curriculum' for fostering skills or attitudes. Undue emphasis, in his opinion, is placed on

> "... the belief that the detailed content or events are of secondary importance as compared to the reproductions of the patterns and stresses of 'reality'. However, the simulation of reality only remains the most efficient way of education as long as we don't come to terms with reality. Once we analyse the real situation and identify the key points we can improve the efficiency of the educational process by concentrating on these" (Romiszowski, 1981, p.371)

To this end he recommends a process of evaluation based on "long-term follow-up techniques" (1981, p.376) using information on past and present performance and reactions. Feedback on this aspect, using indirect measures of output survival and

It would appear that these feedback needs could be answered by a needs assessment. In Kaufman's taxonomy (1979), an external or alpha needs assessment starts from scratch making no assumptions about the value of a system's goals. Where the validity and utility of a system's goals are assumed, existing or beta needs assessment models are based on identifying gaps between actual and desired outcomes, and prioritizing the discrepancies to be dealt with by subsequent reforms. There are a number of difficulties associated with either an alpha or a beta needs assessment of an educational technology program.

Technically, a needs assessment should involve all partners: the learners/graduates, the institution/university board and faculty, and society/employers. Sufficient cooperation from the graduates seems a reasonable expectation. However, it is recommended that a needs assessment be undertaken with the prior commitment to implementation of recommendations on behalf of those responsible for shaping the educational process. It was anticipated that faculty would be interested in the results of an assessment, but that a commitment to act on results would be difficult to obtain by either those controlling resources or curriculum policy . An additional constraint is that a needs assessment should involve employers of alumni and those who considered but did not employ them; resource constraints put this well beyond the direct reach of a study in this context.

Conditions for a full needs assessment could not be met but it is an inappropriate model for reasons other than resource contraints. The needs assessment model espoused by Kaufman (1981) is directed towards finding gaps between expected and actual outcomes as they are related specifically to inputs, processes and products. The identification of gaps traceable to the system's components and conduct would not only be difficult, but perhaps simply inadequate for an educational system that both absorbs so much variety (because there is no educational technology undergraduate program) and produces so much variety (through its options and emphases). Consider also that additions and deletions to the curriculum, changes to the recommended content for option A (Research and Development of Educational Technology) and option B (Production and Evaluation of Educational Materials), varying acceptance standards for

Evaluations of **Merit:**	Evaluations of **Worth:**
-intrinsic	-extrinsic
-absolute	-relative
-determined by peers or connaiseurs	-determined by context or needs assessment

Guba and Lincoln allow that assessment of merit and worth are often done simultaneously ; that judgments of worth frequently depend on satisfaction of standards of merit; and that it is desirable that considerations of one do not drive out standards of the other (p. 46). Judgments of worth address contexts, use ethnographic perspectives, report in the language of the audience needing information, and generally speaking shift the power of judgment to the participant in his context. This move towards what Guba and Lincoln call "responsive evaluation" marks the emergence of a model more systemic than all previous models, in that it recognizes the participation of all legitimate audiences to the act of evaluation, and the variety which an educational system may or must absorb.

> "....it was becoming more and more evident that life in a multi-valued, pluralistic society was not well served by modes of evaluation that persisted in the belief that consensus was possible and that value congruence was a worthwhile aim."(Guba & Lincoln, p.22)

While this sounds as if directed particularly to public school life in the North American continent, it also holds for various interest groups attached to a program which is in the midst of being evaluated - a highly political act. The various stakeholding audiences are perceived as having "concerns" and the audiences may identify themselves with one or another side of an "issue". Guba and Lincoln (1981) define a concern as any matter of interest or importance to a legitimate stakeholder; an issue is "any statement, proposition or focus that allows for the presentation of different points of view", and about which people may disagree (p. 34).

Responsive evaluation is based on the concerns and issues of the stakeholding audiences, and therefore its implementation involves description, needs assessment and judgment. Stake (1975, 1976, 1986) was the first to describe responsive evaluation, and recommended it in general for educational program evaluation:

> "To emphasize evaluation issues that are important for each particular program, I recommend the responsive evaluation approach. It is an approach that trades off some measurement precision in order to increase the usefulness of findings to persons in and around the program. An educational evaluation is responsive if it orients more directly to program activities than to program intents; responds to audiences requirements for information; and if the different value perspectives present are refered to in reporting the success and failure of the program." (Stake, 1975, p. 14)

Guba and Lincoln expand on Stake's model, and relate the merit/worth distinction to what they call "developmental" and "adoptive" evaluation (p. 50). Their table is reproduced below.

Type of Evaluation	*Merit (Developmental)*	*Worth (Adoptive)*
Formative	Intent: Modify and improve design	Intent: fit entity into local context
	Audience: entity development team	Audience: local adaptation team
	Source of Standards: panel of substantive experts	Source of standards: assessment of local context and values
Summative	Intent: critique, certify and warrant entity	Intent: certify and warrant entity for local use
	Audience: professional peers; potential adopters	Audience: local decision-makers
	Source of Standards: panel of substantive experts	Source of Standards: local needs assessment

The evaluation of the M.A. Educational Technology program clearly calls for an evaluation of worth. Since this study is primarily directed to student decision-makers, it

is concerned with the assessment of local context/values, and uses a needs assessment of some kind as a basis of standards. ("Local" in this case, means the individual 'context'.) Primarily this evaluation is an adoptive evaluation. It is both summative and formative, depending on how the information yielded is used: a summative evaluation of worth, by Guba and Lincoln's definition, if we view it as an evaluation of former manifestations of the program; it is a formative evaluation of worth if we use it to understand and respond to the current program. The information obtained in the study could also contribute to the type of developmental formative evaluation (of merit) used in faculty curriculum development.

Any generalization attendant on an evaluation of this type involves generalizing from past to future; what holds true from one time context to another is not so much an issue of external validity, as what naturalistic inquirers call "fit". For tasks like analysing results (to, for example, provide information relevent to curriculum decision-making), the researcher is advised

> "... to think in terms of working hypotheses and of testing the degree of fit between the context in which the working hypotheses were generated and the context to which they are to be next applied" (Guba & Lincoln p.120)

The student must provide this context. To facilitate this, the type of report needed by students is the typical product of naturalistic research, a "thick description' of the "evaluand"(entity being evaluated) (Guba & Lincoln p.119), but Filstead (1970) emphasizes

> "The researcher and his readers thus share a joint responsibility. The researcher ought to provide sufficiently clear statements of theory and description so that readers can carefully assess the credibility of the theoretical framework offered in his publication. A cardinal rule for the researcher is that whenever he himself feels most dubious about a publication - or foresees that his readers may well be dubious - then he should specify quite

explicitly upon what kinds of data his interpretation rests." (p. 298)

The method deployed by responsive evaluation and other forms of qualitative research involve field study techniques such as observation, simultaneous multiple hypothesis 'testing', collection of data and analysis, and immersion in the evaluand (Glaser and Straus, 1967; Filstead,1970; Guba & Lincoln, 1981). It is holistic and seeks 'perspectives' rather than the truth. The tradition is journalistic and anthropological . A typical example is the case study, but it would not be the form in which to answer the research questions addressed here. Nevertheless, as many relationships as possible were established from the information gathered, providing as "thick" a description as needed from the experiences of many graduates. The advantage of a report done in this general tradition is that it would be comprehensible even to the newest M.A. student. The disadvantage lies in the nature of qualitative data-gathering.

> "...the distinctions between worth and merit make it plain that evaluations of worth, at least, require extensive immersion in the context of the evaluand, for the values, standards, and conditions under which worth is determined can be found only there." (Guba & Lincoln, p. 52)

A major criticism of these qualitative research features is that they allowed the researcher to become *too* intimate with the evaluand, with the tendency to become highly subjective. Guba and Lincoln (1981) cite two enormously successful studies that absorbed their creators for years: Erving Goffman's Asylums and Juluis Roth's Timetables. Goffman's (1961) thick description of institutions comes to over 300 pages, is organized thematically, uses both description and judgment in it's persuasive condemnation of institutional brutality, and continues to have a much wider reading audience than originally intended. While such shining examples exist, it is also true that researcher bias was a potential weak spot for this particular study.

There were some advantages to the author being a participant in the educational technology Master's program, in that familiarity with student's concerns and issues was guaranteed, and actually increases in some ways the credibility of the study. However, my situation as researcher stretches the concept of participant-observer to the extreme. Neutrality problems are not confined to the evaluation itself. As a non-commissioned study, a thesis project, judgment of the evaluation's worth rests with a subset of the educational technology faculty itself. Evaluation by definition involves value judgments and a conflict of values and interests will be seen to be everywhere present. The political nature of evaluation could not have a better illustration.

The subjective involvement of all parties required an approach to the problem that accommodated the complexities of various party's standards and values while reducing erratic or subjective influences in the data-gathering and interpretation.The use of more "objective" survey-based information gathering was essential, although bolstering naturalistic inquiry methods with the more "scientific" data gathering techniques is somewhat contentious among proponents of naturalistic inquiry (Bogdan and Taylor, 1975; Guba & Lincoln, 1981; Filstead, 1970). The standard survey was used in this case for two reasons: it served to temper the subjectivity of the individual researcher as instrument; equally important, it is also a commonly used cost-effective way of reaching the scattered population of graduates.

Dale (1975) concludes that many educators feel that the follow-up process is a reliable and valuable technique for evaluating educational systems. The reason cited is that the former student is held to be in a good position to judge the effectiveness of the program as well as being able to provide useful information regarding career patterns of former learners. So the long term follow up technique would seem to offer the most in the way of a quantitative basis for this study. Feedback was sought for utilitarian purposes, but not without recognizing differences in the broader educational and personal needs of the learners. The dangers of a pedestrian approach are summarized by Mitchell in his recent article:

> "Systems thinking can unite these opposing tensions by providing a common perspective on problems of communication

> and control (cybernetics), the rigor of scientific and technological research, and the scientific models of operational research. Nonetheless we must beware lest we yield, unwittingly, to social pressures to measure educational activities and human dignity largely in terms of utility."(1986, p. 232)

Worth and utility have not been taken for one and the same in the design of this evaluation. The model used for qualitative analysis will allow the issues to be scrutinized in their complexity rather than be lost in an unsuitable consensual and quantitative model. Survey data is an objective quantitative foundation placed at the service of a qualitative methodology for content analysis and journalistic reporting. No reason could be found to select one or the other school of enquiry. This hybrid method provides a robust and servicable evaluation report.

EVALUATION QUESTIONS

Since the goal of the study is to answer the information needs of current students about possible educational technology careers and related forms of career preparation, the student population is the major stakeholding audience to be addressed by the evaluation report. The focus of the inquiry is therefore partly set by this "sponsor". Essentially a single research question is addressed. What are the issues surrounding the selection of electives and options in the M.A. program? These must be illuminated for the purpose of increasing student control and responsibility for career preparation.

To clarify the purpose of the evaluation, responses to the related questions must be categorized and elaborated. Guba and Lincoln supply guidelines for identifying key issues and concerns (1981) but do not address the formulation of questions, and the association of those questions to particular types of stakeholding audiences. Smith (1980, 1981, 1987) is more helpful in this regard. Viewing evaluation as applied inquiry, Smith has devoted himself to categorizing research questions, expanding very practically on Guba and Lincoln's guidelines. Smith categorizes evaluation questions as causal or non-causal, and further as research, policy, evaluation and management questions. Non-causal inquiry, such as this one, is usually descriptive without intent to establish causal links.

Non-causal research, non-causal policy and non-causal evaluation are the categories of questions this evaluation addresses. Essentially research claims answer descriptive questions, policy claims answer practical questions requiring action based on global values, and evaluation claims answer specific related value questions "including intrinsic, instrumental, comparative, decision and idealization" (Smith, 1987, p.313). The non-causal research question model is 'what is X or the experience of X'. In this study the examples are: how can graduates be described demographically?; what is the experience of graduates in the work force?; how can we describe their occupational roles?

Evaluation questions are modeled as 'why does X value N?'. Survey items covered these related areas: what skills are valued?; what program components and

directions are valued?; by whom (what sub-groups) are they valued and why?

Policy questions take the forms of: ' what do we mean by Y' and 'why does X support S?' This becomes, in the survey context: how do we describe these occupational roles? Why do certain occupational groups favor certain aspects of the program?

The questionnaire follow-up (Romiszowski , 1981) on educational outcomes was directed specifically to gathering and integrating certain forms of feedback relevant to these questions. These take the form of two blocks of enquiry; first, how can the population be described? This includes basic demographics and breaks down into some major queries: What types of roles are alumni assuming and creating in the workforce?; How do they perceive advancement and how do they intend to advance?; What was the program concentration of each?

The second area of investigation concerns the issues surrounding curriculum decision-making. Related research questions are: What are their most and least valued skills for their occupation and their advancement and where did they get them?; How are various program components valued?; What are their attitudes towards their work environments?; Have expectations about the degree been met?; What do they believe to be the cause of undesirable outcomes?; Is there any relationship between program concentration and occupation?; Is there any relationship between either program concentration or occupation and the favoring of a new non-thesis option?

It is assumed that each new M.A. candidate can make more informed curriculum choices with a description of the job environment, identification and reflection on issues and concerns surrounding curriculum, personal congruencies and distinctions with the career profiles uncovered, perhaps some evidence of trends regarding the evolving program and the emerging world of educational technology, and a recognition of personal "fit" or lack of it regarding the value systems that effect positions on these issues.

METHOD

Subjects

Two types of alumni participated: those no longer engaged in full-time study in the program who have completed course and internship requirements (Thesis-only) and those who have finished their thesis requirement as well (Graduates). These populations are the most useful untapped sources of information on those who can be said to have left the system. Apart from details on their own survival and contribution, self-reporting of their work activities allow reasonable suppositions about professional (and employer's) demands, concerns and values. A census is not possible; although the program has maintained records on most (estimated 85%) of the former educational technology students, these records are still not complete. Of the some 203 names and addresses preserved it was expected that only 75% of the addresses would be up to date. Seventeen envelopes were officially returned by the post office. Of the remaining 186, 84 were completed and returned before deadline. Uncontrolled problems emerged which influenced response rate; this is discussed under Procedure. The survey received a 45% response.

Quantitative Techniques

Instrumentation

The instrument sought to obtain five types of information which Guba and Lincoln list: "descriptive information, information responsive to concerns, information responsive to issues, information about values, and information about standards relevant to worth and merit assessments." (1981, p.339) It includes simple demographics of interest; an occupational characterization; a program profile of the participant (the courses they took, the internship, type of thesis etc.); attitude probes on lifestyle and career; items addressing some possible issues in the selection of options and concentrations; and a general evaluative section on the program. The instrument was twelve pages long, or six sheets printed both sides. See Appendix F.

Data Collection

Although interviewing techniques would have been prefered for some aspects of the study, the mailed questionnaire seems to be the most popular client-centered method for data collection on activities and functions (Borg, 1967; Cates, 1985; Dale, 1975; Steadham, 1980; Tuckman, 1978; Weston, 1982). The problem of non-response associated with this method could only be addressed by trying to maximize response. The covering letter, a second mail-out, and phone contact with local non-respondents all made appeals for returns. This will be discussed under "Attachments".

In addition to percentage of response it is necessary to consider type of respondent: the identification of ways in which non-respondents might differ from respondents. In this case, there may be a difference in terms of disposition towards the program: the discontented, less successful alumni were thought as likely to respond as a chance to express themselves, while the satisfied and successful are also inclined to report on the details of their good fortune. As it turned out the great majority were graduates, rather than thesis-only types and were about equally located outside or inside Montreal.

Another disadvantage is the survey method's limited provision for free expression and "limited utility at getting to the causes of problems or possible solutions" (Steadham 1980, p.59). Every effort was made to anticipate the information needed for the research. Wide ranges of response were designed for multiple choice or scaled items. Open-ended questions were also used extensively. The analysis of concerns and issues identified was subjected to a review by the current student body to address internal validity questions (see Qualitative Methods section).

Development of the Instruments

Development of the pre-survey questionnaire included:

1. Review of the literature on needs assessment, program evaluation and educational follow-up studies to determine the possible focus and extent of the study

(Kaufman,1981; Kaufman & Meyer, 1981; Kaufman & Stakenas, 1981; Kimpston and Stockton, 1979; Lee, 1973; Miles, 1979; Rossett, 1982; Sarthay,1977; Silber, 1978; Steadham, 1980; Trimby, 1979; Weston, 1982; Witkin, 1977).

2. Inspection of instruments regarding life style preferences, and attitudes to career and work, especially in educational follow-up studies (Dale, 1975; Reichard, 1978).

3. Review of the literature regarding activities and competencies of educational technologists to compile educational technology activities lists (Boyd, 1969; Boutwell, 1976-77; Deden-Parker 1981; Kaufman and Mayer, 1981; Lynton, 1982; Mitchell, 1975, 1977, 1981; Thomas, 1982; Weston, 1982).

4. Inspection of the Concordia University graduate calendars' descriptions of the Master of Arts (Educational Technology) since the program's debut for the purpose of determining stated program goals, academic components and requirements.

5. Development of an initial activities list for educational technologists which was done by selecting and modifying 49 of the more representative activities from the Weston (1982) instrument total of 86. Suggestions were sought from the faculty. Activities were also added and modified by the thesis committee.

6. A pre-survey identified additional useful questions and clarification of existing items, wording and format.

The Instrument

The instrument consists of six sections. The exhibit of the survey form indicates which items were drawn from other sources (See Appendix F).

Section I: demographics. The demographic information of interest is age, sex, first language, place of residence, previous degrees and previous professional background. Of interest to the current student population might be: the average age of

practitioners, their sex, location and how all these relate to fields of practice, level of job responsibility and the difficulty of finding work in the field.

Section II: occupational characterization . This section is intended to probe opportunities in the profession and to describe the sample jobs in detail. It addresses these general research questions: What distinguishable roles are educational technologists assuming and creating in the work force; in what fields and at what levels of responsibility; in what types of organizations and departments? Respondents generally describe their current educational technology related job, or their last such job if they are not currently employed in the area. Information is collected on job emphasis, types of work offered, business and size of organization, level of responsibility, duration of employment, remuneration, and whether educational technologists are an established part of the work force employed there. An indication of the frequency of job change and employment opportunities associated with the field of practice or type of organization are also sought. It was thought that many of these factors may be related to each other and to measures of program satisfaction.The current job is then characterized in detail by requiring the respondent to rate 60 educational technology related job skills on their importance to the current job and to plans for career advancement.

These skills are divided into categories of 1) problem identification, 2) design, 3) production, 4) resources and services, 5) evaluation 6) management, 7) communication, and 8) professional development/research. Respondents also indicated if the skill was obtained primarily in a previous program or profession, in the educational technology program or on the job after leaving the program.

The broad information helped to distinguish occupational profiles which were then checked for cohesion by comparing the relative strength of skills areas for each job type. Which skills may be required for a job, whether or not they are acquired in the program and whether it is acceptable to hone them on the job, should all address some major concerns of current students. This section makes obvious which types of skills are in the greatest demand now. Analysis should also reveal which fields are the most popular "entry points" for educational technologists, which skills are perceived as necessary for advancement and what forms advancement takes.

Section III: unemployment . This section probes the situation of the never employed educational technologist: the nature of current activities; the reasons for, and the duration of, unemployment. This should establish if there is a problem finding work and if the individual attributes it to poor professional preparation, sex discrimination, age, language barriers, choice of location or declining job markets.

Section IV. program profile . This section attempts to collect information needed to model the student for the purposes of creating a program profile. This first addresses the question of whether there exist distinguishable species of students within the program itself and how these species have predominated or declined over the years of the program's existance. Secondly, it allows a comparison to occupational profile, to check correspondence of course selection, clarity of educational goals and career path, perceived skill weaknesses and corresponding program satisfaction. Response items describe the individual in terms of completed requirements, type of thesis and internship, courses taken, time spent, full or part-time status, and financial support. There are items on the relative perceived value of program components. Information is sought on what components offered the best long-term transfer and, by contrast, which became quickly obsolete. It also asks what difference degree completion makes to the individual and to the employer.

Section V: lifestyle . This section of affective measures attempts to uncover attitudes about education in general, the study of educational technology itself and a variety of other broad values for personal organization. This information allows educational technology alumni to be described in another dimension.

Section VI: program . This section is designed to gather hind-sight perceptions of career expectations, the relationship between program components and employment opportunities/demands, extent of their knowledge about the job market in general and whether their expectations have been matched. Specific opinion probes on the direction the program is taking, whether the new non-thesis option would have been selected, whether the degree would have been repeated, and whether career guidance is sufficient are included. Open-ended questions regarding the program's strengths and weaknesses,

and a general solicitation for information relevant to the study close the instrument.

All six sections are designed to provide information required for a needs analysis and to corroborate on a picture of program, career and personal values.

Pre-Survey

A sample of eight educational technology students from Concordia's Master's program, both "Thesis-only" and "Graduates" participated. This sample was identified by educational technology faculty. Each professor was asked to recommend two Montreal "alumni" on the basis of each student's typicality to the program alumni in general, but also on the basis of occupational differences between the two choices. These volunteers completed an earlier version of the instrument appended in this proposal.

The covering letter and instructions for the pre-survey are included in the exhibits. See Appendices A and B. This stage was followed by a telephone or personal interview to discuss improvement of the survey instrument. Data from the pre-survey was included in data of the study where questions were identical.

Revision of the Instrument

The pre-survey resulted in modification and refinement of the instrument as previously outlined. Changes were discussed with the thesis committee members. The final version only is included in the attachments.

Attachments

Covering letter. The covering letter contained incentives to respond. First, it states the intention to provide a summary of results to participants. This document will serve as feedback for these "alumni". The second possible attraction is the respondent's inclusion in a network of educational technologists; all subjects were asked to return the "information sheet " to indicate interest in this network. The other usual reminders designed to motivate participation are included. The covering letter for the survey

participants and the letter for the reminder (second) second mail-out are also included. See Appendices C and D.

Instructions. There was one page of instructions for the survey which included a clarification of some terms used. See Appendix E.

Information sheet. This requests address correction, phone number, current place of employment and educational technology interests. Suggestions on the possible nature and uses of a network were sought. See Appendix G.

Procedure

The first wave of questionnaires were sent out with a covering letter and a stamped self-addressed envelope. Participants concerned about privacy, due to identification of the completed survey with themselves, were advised to return the information sheet separately from the questionnaire. Overcoming non-response required two types of follow-up. A mail strike lasting five weeks delayed responses and follow up by mail or phone. Within a reasonable period after mail service resumed, Montreal and area residents who had not returned information sheets were called and urged to return the survey form. New questionnaires were sent out to these individuals where requested. Out of town non-respondents were simply sent another questionnaire copy and new covering letter. The cut off date for returns was some 15 weeks after the initial wave.

Qualitative Methods

The steps in a typical responsive evaluation are as follows: a) the objectives of the entity being evaluated are determined; b) the principle and other audiences are identified; c) special conditions under which the evaluation is taking place are described; d) value characteristics of the stakeholding audiences are set out; e) a needs assessment or context evaluation of conditions precipitating some organizational change is conducted. In actuality, evaluator was participant rather than researcher at stages a and b, and the survey acted as a basis for determining needs (stage e); decriptions of the results of stages c and d are contained in this report.

Inquiry for non-causal evaluation includes investigative journalism, public hearings, interviewing and other naturalistic methods (Smith, 1981) but Guba and Lincoln's descrition of method provided the basis for the procedure (1981). Typically, investigation proceeds within the program itself using obtrusive and unobtrusive measures, usually interviews, discussions, examination of documents and previous studies etc. The questions of interest thus being determined, the next phase was supplanted by quantitative methods, the survey itself. Unitizing, categorizing, characterizing, and assessing the integrity of information sets derived occurred as hypotheses were formulated,"tested", rejected, reformed. Concerns are investigated, issues are identified and value frameworks matched or inferred: these are the basic moves in a naturalistic inquiry or responsive evaluation (Guba & Lincoln, 1981; Filstead, 1970).

Qualitative methods described above were used to organize and analyse the questionnaire responses into meaningful sets and categories. Meaning was taken from content and from context: depending on what evaluation question is being addressed the same data can be unitized, categorized and prioritized several times over. The criteria for creating perspectives of this kind (determination of sets, identification of concerns, and development of issues) must always be justified or explained (Guba & Lincoln, 1981) and this is done partly in the Results and Discussion section, partly in the Issues and Values section, wherever appropriate, of this report.

These sets should always be reproducible by another judge, meaning that

> "The second judge ought to be able to verify that, first, the set of categories makes sense in view of the data from which they emerged, and, second, that the data have been appropriately assigned within the category system" (Guba & Lincoln, p. 97).

Each set should also be credible to the set of persons who provided the information. My advisor was deemed to be a competent judge of sets for this study. The

sets were also reviewed in a student forum undertaken as a general part of the responsive evaluation process, to be detailed later.

From this information the evaluator identifies concerns and issues relating to the questions which must be addressed. The more individuals express a concern, and if patterns can be seen in a 'multiverse' of concerns, the easier it is to identify key issues. An issue is distinguished from a concern in that it allows for different, often conflicting stances (Guba & Lincoln, p. 304). Some key issues are established a priori, such as which option, thesis or non-thesis might a new student be advised to enter. These stances are then understood by reflecting on the values that underlie the positions; a value is defined as:

> "any principle or standard that leads to judgments of relative or absolute utility, goodness or importance or that guides choices among alternatives...Values may be held by individuals in idiosyncratic ways, but they are most often formed into systems of related values that characterize given social or cultural groups". (Guba & Lincoln, p. 305)

Any sub groups of this kind are identified. For this study for example, certain occupational groups were classified by virtue of job title, department function and organization. These sets were compared on which skill clusters they found most important, and it was evident that different skills were important to each group. This provided a quantitative validation of the qualitatively derived set. It is otherwise held in naturalistic inquiry that an audience's values can be reasonably well infered from the issues and concerns it identifies (Scriven, 1974; Guba & Lincoln, 1981). Infinite regress is avoided by selecting the most plausible value statement and taking it back to the audience for reaction.

Preliminary conclusions or recommendations were drawn up and presented to a forum of students. This step is an essential part of a responsive evaluation, to confirm value frameworks, issues and range of perspectives. A review by the group that

provided the information is central to naturalistic evaluation. Rather than undertake to re-establish contact with the scattered graduate population, already taxed by a long survey, it was determined that seeking a response from current students had several advantages. All M.A. students, current and former, might be seen as a single population, a "stakeholding audience" to which the evaluator should refer the preliminary report. In this context, a sample of (current) students could verify (previous) graduate students' concerns and issues. This is tantamount to returning to the same population for a response. In another sense, the current student body is the population to which we are "generalizing" in the special sense of evaluation studies, and they may in fact provide fresh and contemporary perspectives on issues formed from a survey of past student bodies.

This forum with the current student body took place some five months after the data-gathering was completed. Generally, all concerns and issues were confirmed by the twelve Master's students participating, and any modifications are reported in the following chapter and the final section of this report.

RESULTS

For the 203 questionnaires sent out, seventeen official post office returns were received. Of the presumably contactable population of 186, eighty four replies were received before the cut off date. A return rate of 45% was calculated on that basis, although six more replies arrived during the course of the analysis.

For all questions the frequencies are reported for each value and the number of respondents is given from a possible total of 84.

Section I: Demographics

1.A My age is

	Frequency	Relative frequency percentage
under 25	0	
25-35	36	42.9
36-45	30	35.7
46 and over	16	19.0
not answered	2	2.4

1.B My sex is

	Frequency	Relative frequency percentage
male	43	51.2
female	38	45.2
not answered	3	3.6

1.C My first language is

	Frequency	Relative frequency percentage
English	64	76.2
French	12	14.3

other	5	6.0
not answered	3	3.6

1.D.You may have decided to keep your questionnaire response anonymous; even so, would you please indicate (generally) where you live.

Montreal area 49
Toronto area 6
another Canadian location. Please fill-in city/province 15
USA. Please fill in city/state 2
another country. 8

This can also be viewed as:

	Frequency	Relative frequency percentage
Montreal	49	58.3
other Canadian	21	25.0
foreign	10	11.9
not answered	4	4.8

Are you from another country? Yes: 13 , No: 7 , not answered: 64.
Where? Australia: 1, England: 1, Holland: 1, Isreal: 1, Kenya: 1, Mexico: 3, Scotland: 1, U.S.A.: 2, Vietnam: 1.
Did you come here to Canada to study? Yes: 9 , No: 5 , not applicable: 8 , not answered: 62.

2.Previous degrees : Name,with majors.
Listing up to three degrees was allowed for each person. Fifty-one different degrees and majors were reported by 81 of the 84 study respondents. These were categorized as follows. In the first view subjects were divided into those with a previous education

degree, and those with no previous education degree.

Degree	Frequency	Relative frequency percentage
education	18	21.4
no education	63	75.0
not answered	3	3.6

In the second view, those with undergraduate degrees in the humanities are distinguished from those with undergraduate degrees in the sciences.

Degree	Frequency	Relative frequency percentage
humanities	62	73.8
sciences	19	22.6
not answered	3	3.6

3. Background - Professional

Please list one or two major areas you worked in before entering the Ed. Tech. program (if applicable).

Fifty-nine different professional backgounds were reported by 71 of the 84 study respondents.

These were categorized as follows. In the first view all people with a teaching or administrative background in a public school, CEGEP, or university , were distinguished from all other professional backgrounds.

Professional background	Frequency	Relative frequency percentage
education background	44	52.4
other background	25	29.8
not answered	15	17.9

Another view was created to provide more information on professional backgrounds.

Teachers: this identifies those who were employed as teachers or lecturers.

"Other" Educational: includes those with other types of backgrounds in education.

Media: this includes individuals who previously worked in media production, journalism, broadcasting, graphic and visual arts.

Other: a catch-all category that includes occupations such as "computer science clerk", 'peace corps volunteer", "child psychiatry" and "marketing VP".

Professional background	Frequency	Relative frequency percentage
teachers	38	45.2
mixed	15	17.9
media	10	11.9
"other" educational	6	7.1
not answered	15	17.9

4. Are you now working or have you ever worked in a job where you use educational technology skills?

	Frequency	Relative frequency percentage.
yes	78	92.9
no	5	6.0
not answered	1	1.2

Section II: Occupation

This section of the questionnaire was designed to address the following research questions. What types of roles are alumni assuming and creating in the workforce? In

what fields, organizations and at what levels of responsibility? What are their most and least valued skills for their current job andwhere did they get these skills? What skills do they need for advancement? What are their personal career expectations? Where are they aquiring these skills?

If you are currently employed please describe the job you hold now. If you are not presently employed please describe the last educational technology related job you held.

5. I am going to describe

	Frequency	Relative frequency percentage
my current job	65	77.4
my last job	13	15.5
not applicable	4	4.8
not answered	2	2.4

6. A. My job is/was

	Frequency	Relative frequency percentage
full-time	67	79.8
part-time	10	11.9
not applicable	4	4.8
not answered	3	3.6

B. My job is/was

	Frequency	Relative frequency percentage
permanent	52	61.9
consulting contract	18	21.4
temporary	4	4.8
not applicable	4	4.8
not answered	6	7.1

C. If part-time, how many days per week?

Days	Frequency	Relative frequency percentage.
one	1	1.2
two	1	1.2
three	3	3.6
four	3	3.6
not applicable	66	78.6
not answered	10	11.9

7. What is your job title?

Sixty-five different job titles were reported by 76 of the 84 respondents. These were not categorized but were used along with organization name and type, department name, and department function to create broad categories of jobs, which will be discussed later. They are listed in Appendix H.

8. What is the type of business or institution?

Forty-seven organization types were reported by 75 of the 84 respondents. They were organized as follows.

Traditional educational institutions: public schools such as elementary and high schools, CEGEPS, universities.

Government, Crown Corporations, Military: This is a fairly obvious category and includes federal and provincial governments, Department of National Defence, national and provincial broadcasting networks, etc.

Private Industy (Training): this encompasses transportation, banking, and even aluminum and tobacco industries who are big enough to need large internal training departments.

Educational materials producers, training consultants: These are typically small producers and consulting firms; sometimes they specialize in certain media like video or computer, or management versus technical training is specified.

Other: Other businesses using educational technologists are computer system retailers, medical equipment, real estate, and engineering companies.

Organization type	Frequency	Relative frequency %
traditional educational institutions	30	35.7
educ. materials producers, training consultants	16	19.0
private industry training	13	15.5
gov't, crown, military	10	11.9
other	6	7.1
not applicable	4	4.8
not answered	5	6.0

9. The name of your department.

Forty-nine different department names were reported by 66 of the 84 respondents.

What is it's function, basically?

Fifty-six different descriptions were generated by 67 of the 84 respondents.

10. The name of the company (optional)
Fifty-three employing organizations were reported by 64 of the respondents.

Responses to items 7 through 10 are also displayed in list form in Appendix H along with job titles. They were combined to broadly categorize each job being described, and these in turn were organized into occupational groups.
The categories established were as follows.

Teaching/Lecturing
In this category a large portion of the job time is devoted to stand-up instruction usually within a subject matter specialty for a public educational or training institution. In a small number (3 cases) educational technology itself (or a related area) is taught. In the remaining cases educational technology may be practiced as part of their teaching job, and their expertise may even be used to some extent by their school or department but this group does not have a job mandate to practice educational technology on behalf of the institution. Some typical job titles are: "teacher-university", "special education teacher".

Instructional Design/ Evaluation

This category is fairly self-explanatory and these jobs often require specialization in a medium such as computers or video. The typical job may require needs analysis or needs assessment skills; but frequently the designer becomes involved when the need for training has been previously identified. At this level of design and evaluation the employee is involved with all stages in the development of an instructional package, courseware, lesson plan, job aid, etc. Skills in formative and summative evaluation and test design are essential. Evaluation and pilot testing are important activities in most design jobs and large producers of instructional programs and materials will have jobs defined specifically around evaluation functions.

This category was originally conceived of as two positions: educational materials producer and instructional designer. The materials producer was comparable to

Mitchell's (1975) materials producer; s/he concentrated on production with little or no needs analysis (prior to the decision to instruct) and evaluation. However, the category was collapsed into Instructional Designer/Evaluator when it appeared to describe only four cases.

Some typical job titles are: "instructional development officer", "training development assistant", "instructional specialist".

Training Project Management, Consultancy

The management of small instructional services departments or companies producing training materials require what might be refered to as entrepreneurial skills . Freelance consultancy, or the management of single projects within large comapies would require similiar competancies such as budgeting, scheduling, planning, communicating. These people co-ordinate other people and even as consultants generally have some organization staff under their direction. So the body creating the job may be a small consulting firm, training systems producer, or a large company with multiple internal training projects. Some typical job titles are: "training systems consultant", "project manager", "training co-ordinator", "senior training officer".

A small sub-section of these jobs, usually offered by small companies, tend to demand (and provide) broader experience than training specialists have, or would get in corporate training. These skills are in the entrepreneurial areas including marketing, sales and people skills. These jobs are characterized by a softening of focus on training or education and are frequently oriented towards the development of mass market or instructional software products, customization of information systems, or client support for a mass market product or system which may include, but is not limited to, training.

Human Resource Development

Beyond the management of training systems, this job category focuses on the broad goals of the organization and its members. The setting is the large industry or

government agency. Some typical job titles are: "Director of Human Resources and Training", "Assistant Manager, Human Resources", "Director, Personnel and Training".

Educational Services Planner/ Administrator

This job category includes the highest positions in institutions or agencies devoted solely to public education, training, educational broadcasting or distance education. Also included are the directors of educational technology units or program directors within higher educational institutions. Some typical examples are: "Director of Educational Support Services", "Director of Radio Programming, CBC Quebec", "Associate Director, Educational Technology Centre", "Principal, Training School", "Senior Policy Analyst "(government).

Other: Placed in the Other category are jobs such as "Director of Marketing", "filmmaker", "journalist".

Job category	Frequency	Relative frequency %
teacher/trainer/lecturer	16	19.0
instructional designer/evaluator	14	16.7
training project management/consultancy	22	26.2
human resource development	7	8.3
educational services planner/administrator	16	16.7
unknown/other	9	10.7

11. A.The size of the institution (Weston 1982) (the entire institution or ministry, not the department) is/was:

	Frequency	Relative frequency %
5 - 30	9	10.7
31 - 100	8	9.5
101 - 999	21	25.0
1,000 - 4,999	19	22.6
5,000 - 9,999	5	6.0
10,000 - 19,999	1	1.2
20,000 or more	7	8.3
not applicable	5	6.0
not answered	9	10.7

B. The size of the department

	Frequency	Relative frequency %
8 or less	29	34.5
9 to 15	18	21.4
16 to 30	11	13.1
30 to 50	3	3.6
51 plus	2	2.4
not applicable	8	9.5
not answered	13	15.5

12. My yearly salary for the job I'm describing is/was
(If you are contractual, multiply your daily rate by 240.)

	Frequency	Relative frequency %
under 12,999	3	3.6
12 - 20,999	3	3.6
21 - 27,999	12	14.3
28 - 35,999	17	20.2
36 - 43,999	23	27.4
44 - 54,999	9	10.7
55,000 plus	6	7.1
not applicable	4	4.8
not answered	7	8.3

13. Years of educational technology related job experience

	Frequency	Relative frequency %
0 -2	17	20.2
3 -5	22	26.2
6 - 10	22	26.2
11 - 20	13	15.5
not applicable	4	4.8
not answered	6	7.1

Salary scale, experience and occupation

Forty-five percent report making $36,000 per year or more. Salary ranges vary with occupation. On the following chart, only full-time jobs in North America are reported. Teachers are excluded.

Instructional Designers/Evaluators — Number in Group: 14 (N/A=1)

Years of Experience	Salary range	Number earning
6-10	36-43,999	3
3-5	36-43,999	3
	28-35,999	2
0-2	28-35,999	2
	21-27,999	1
	12-20,999	2

Training Project Managers — Number in group:22 (N/A=8)

Years of Experience	Salary range	Number earning
11 years or more	55,000 plus	1
	36-433,999	2
	28-35,999	1
6-10	55,000 plus	1
	44-54,999	1
	36-43,999	2
3-5	36-43,999	1
	28-35,999	2
0-2	44-54,999	1
	36-43,999	2
	21-27,999	2

Human Resource Managers — Number in group: 7 (N/A =1)

Years of Experience	Salary range	Number earning
11 plus	55,000 plus	1
	45-54,999	2
6-10	44-54,999	2
	36-43,999	1

Educational Services Planners/Administrators — Number in group: 16 (N/A =2)

Years of Experience	Salary range	Number earning
11 plus	55,000 plus	2
	36-43,999	1
6-10	44-54,999	2
	28,35,999	2
	21-27,999	2
3-5	36-43,999	1
	21-27,999	1
0-2	28-35,999	1
	21-27,999	1
	12-20,999	1

It appears new graduates most frequently enter instructional design jobs; ten of the fourteen in this category graduated within the last two years. About a third of the training project managers are also very recent graduates. Five of seven Human Resources Managers graduated prior to 1980, as did eight of the twelve Educational Planners/Administrators. Instructional Designers also appear to be

the "youngest group.

Occupation	Age		
	26-35	36-45	46 plus
Teachers	5	6	5
Instructional Designers	9	2	2
Training Project Managers/ Consultants	12	8	2
Human Resources Managers	2	5	0
Educational Services Planners/Administrators	3	7	6

14.The longest time I have held one educational technology position is (in years)

Years	Frequency
1	8
2	13
3	10
4	12
5	3
6	3
7	4
8	4
10	4
12	2
13	1
not applicable	4
not answered	16

15.I have held ____ full-time educational technology related jobs since I left the program.

	Frequency	Relative frequency percentage
1	31	36.9
2	22	26.2
3	7	8.3
4	3	3.6
6	1	1.2
7	1	1.2
not applicable	5	6.0
not answered	14	16.7

16. Occupational Characterization

The following is a list of activities performed by many educational technologists in their occupations. The activities have been sub-divided into these categories: Problem Identification, Design, Production, Resources and Services, Evaluation, Management, Communication, and Professional Development.
Please respond to each activity/skill statement in 2 ways:

1. Importance to Current Job : The degree to which you perceive this activity to be essential to the job you are describing. The scale means the following:

1	2	3	4
no importance	some importance	quite important	essential

2.Received mainly: Did you acquire this skill :
(PD) in a previous degree or job,
(ET) in the Educational Technology program, or

(OTJ) On The Job - in an Educational Technology related job you performed since being in the program?

PROBLEM IDENTIFICATION

1. Conduct a needs analysis	1 (10) 2 (15) 3 (19) 4 (32) median 3.4 not answered (8) PD (9) ET (26) OTJ (32) Mixed (7) N/A (10)
2. Evaluate conclusions of a needs analysis	1 (8) 2 (17) 3 (23) 4 (28) median 3.2 not answered (8) PD (7) ET (29) OTJ (33) Mixed (5) N/A (10)
3. Use cybernetic tools to analyse an existing or proposed system	1 (28) 2 (18) 3 (22) 4 (7) median 2.3 not answered (9) PD (2) ET (55) OTJ (10) Mixed (4) N/A (13)
4. Propose a plan to act on analysis results	1 (7) 2 (12) 3 (22) 4 (34) median 3.5 not answered (9) PD (7) ET (19) OTJ (41) Mixed (7) N/A (10)
5. Conduct a task and content analysis (with or without domain experts)	1 (13) 2 (9) 3 (21) 4 (31) median 3.5 not answered (10) PD (6) ET (35) OTJ (22) Mixed (5) N/A (16)
6. Analyse the learning environment	1 (5) 2 (11) 3 (28) 4 (31) median 3.4 not answered (9) PD (7) ET (32) OTJ (19) Mixed (12) N/A [14]
7. Analyse learner characteristics	1 (8) 2 (12) 3 (23) 4 (31) median 3.5 not answered (10) PD (10) ET (33) OTJ (16) Mixed (9) N/A (16)

8. Specify product/system standards, goals	1 (10) 2 (9) 3 (19) 4 (35) median 3.6 not answered (11) PD (7) ET (29) OTJ (23) Mixed (10) N/A (15)

Mean of the medians for problem identification skills: 3.3

DESIGN

9. Use a cybernetic model to design a service or product	1 (26) 2 (16) 3 (16) 4(14) median 2.5 not answered (12) PD (2) ET (50) OTJ (7) Mixed (3) N/A (22)
10. Prepare specifications for materials, systems	1 (15) 2 (12) 3 (18) 4(28) median 3.3 not answered (11) PD (3) ET (33) OTJ (25) Mixed (6) N/A (17)
11. Perform an instructional /task/ job analysis	1 (11) 2 (10) 3 (25) 4(27) median 3.3 not answered (11) PD (5) ET (42) OTJ (15) Mixed (8) N/A (14)
12. Identify and sequence objectives	1 (10) 2 (6) 3 (20) 4(38) median 3.7 not answered (10) PD (8) ET (40) OTJ (12) Mixed (7) N/A (17)
13. Use instructional development techniques to design a product	1 (14) 2 (7) 3 (19) 4 (33) median 3.6 not answered (11) PD (3) ET (50) OTJ (9) Mixed (8) N/A (14)
14. Design a program or curriculum	1 (11) 2 (16) 3 (15) 4(32) median 3.5 not answered (10) PD (5) ET (37) OTJ (16) Mixed (11) N/A (15)

15. Select media to be used	1 (11) 2 (10) 3 (25) 4(29) median 3.3 not answered (9) PD (5) ET (37) OTJ (17) Mixed (13) N/A (12)
16. Write scripts, storyboards, materials	1 (16) 2 (13) 3 (21) 4(25) median 3.1 not answered (9) PD (8) ET (34) OTJ (16) Mixed (10) N/A (16)

Mean of the medians for design skills: 3.3

PRODUCTION

17. Direct production of materials/review technical quality	1 (17) 2 (14) 3 (19) 4 (23) median 3.1 not answered (11) PD (9) ET (29) OTJ (22) Mixed (7) N/A (17)
18. Direct recording sessions	1 (42) 2 (8) 3 (9) 4 (14) median 1.5 not answered (11) PD (9) ET (34) OTJ (12) Mixed (3) N/A (26)
19. Direct film, video or stills shoot	1 (40) 2 (12) 3 (10) 4(11) median 1.7 not answered (11) PD (34) ET (11) OTJ (6) Mixed (3) N/A (30)
20. Review final edit/mix	1 (34) 2 (11) 3 (5) 4 (21) median 2.2 not answered (13) PD (9) ET (32) OTJ (14) Mixed (5) N/A (24)
21. Typset print materials	1 (28) 2 (18) 3 (11) 4(16) median 2.3 not answered (11) PD (10) ET (24) OTJ (21) Mixed (5) N/A (24)

22. Mount slides, produce photos/graphics	1 (36) 2 (17) 3 (8) 4 (12) not answered (11) PD (13) ET (32) OTJ (10) Mixed (4) N/A (25)	median 1.9
23. Record sound, perform edit/mix	1 (48) 2 (6) 3 (4) 4 (13) not answered (13) PD (13) ET (26) OTJ (12) Mixed (2) N/A (31)	median 1.4
24. Shoot film, video or stills	1 (42) 2 (10) 3 (8) 4 (11) not answered (13) PD (12) ET (28) OTJ (10) Mixed (6) N/A (28)	median 1.5
25. Edit film, video or slide show	1 (46) 2 (6) 3 (8) 4 (10) not answered (14) PD (12) ET (28) OTJ (11) Mixed (5) N/A (28)	median 1.4

Mean of the medians for production skills: 1.9

RESOURCES AND SERVICES

26.Determine service priorities for an educational media unit, production facility or resource-based learning centre	1 (34) 2 (16) 3 (12) 4(11) not answered (11) PD (4) ET (28) OTJ (21) Mixed (5) N/A (26)	median 2.0
27.Select hardware to meet service or production needs	1 (26) 2 (27) 3 (6) 4 (14) not answered (11) PD (5) ET (22) OTJ (28) Mixed (8) N/A (21)	median 2.1
28. Determine supplies required	1 (30) 2 (16) 3 (11) 4(17) not answered (10) PD (4) ET (22) OTJ (30) Mixed (3) N/A (25)	median 2.3

29. Design storage and retrieval system	1 (34) 2 (16) 3 (4) 4 (17) median 2.0 not answered (13) PD (5) ET (22) OTJ (22) Mixed (3) N/A (32)
30. Assist clients in use of the services	1 (28) 2 (10) 3 (13) 4 (22) median 2.8 not answered (11) PD (7) ET (18) OTJ (27) Mixed (3) N/A (29)
31. Maintain equipment, arrange or perform repair	1 (45) 2 (6) 3 (6) 4 (14) median 1.4 not answered (13) PD (6) ET (14) OTJ (2[illegible]) Mixed (2) N/A (36)

Mean of the medians for resources and services skills: 2.1

EVALUATION

32. Determine criteria for product/system evaluation	1 (14) 2 (13) 3 (15) 4 (31) median 3.5 not answered (11) PD (3) ET (43) OTJ (11) Mixed (13) N/A (14)
33. Design formative/summative evaluation and data collection procedures	1 (12) 2 (13) 3 (17) 4 (30) median 3.5 not answered (12) PD (4) ET (47) OTJ (10) Mixed (8) N/A (15)
34.Conduct formative/summative evaluations to see if the product/system meets design specifications	1 (17) 2 (15) 3 (13) 4(28) median 3.3 not answered (11) PD (4) ET (45) OTJ (12) Mixed (8) N/A (15)
35. Pilot test prototype materials	1 (14) 2 (16) 3 (16) 4 (28) median 3.3 not answered (10) PD (2) ET (37) OTJ (18) Mixed (10) N/A (17)

36. Collect evaluation data	1 (15) 2 (11) 3 (18) 4(31) not answered (9) PD (5) ET (45) OTJ (11) Mixed (9) N/A (14)	median 3.4
37. Interpret evaluation data/statistics	1 (13) 2 (7) 3 (21) 4 (32) not answered (11) PD (3) ET (47) OTJ (10) Mixed (10) N/A (14)	median 3.5
38. Revise components, sequence based on evaluation data	1 (20) 2 (8) 3 (15) 4 (29) not answered (12) PD (4) ET (39) OTJ (13) Mixed (8) N/A (20)	median 3.4

Mean of the medians for evaluation skills: 3.4

MANAGEMENT

39. Monitor opportunities to initiate projects	1 (17) 2 (7) 3 (16) 4 (31) not answered (13) PD (5) ET (15) OTJ (31) Mixed (8) N/A (25)	median 3.6
40. Use a cybernetic model to determine policy and improve system functioning	1 (31) 2 (17) 3 (14) 4 (8) not answered (14) PD (4) ET (40) OTJ (8) Mixed (1) N/A (31)	median 2.1
41. Interview and hire staff	1 (24) 2 (14) 3 (18) 4 (17) not answered (11) PD (10) ET (4) OTJ (39) Mixed (1) N/A (30)	median 2.7

42. Prepare staff plan, plan of equipment, materials,facilities and services to optimize productivity and quality	1 (19) 2 (10) 3 (18) 4 [22] median 3.2 not answered (13) PD (5) ET (10) OTJ (32) Mixed (9) N/A (27)
43. Prepare budget for the unit/company	1 (22) 2 (9) 3 (18) 4 (22) median 3.1 not answered (15) PD (7) ET (4) OTJ (40) Mixed (6) N/A (28)
44. Consult with managers or members of other units	1 (17) 2 (5) 3 (10) 4 (39) median 3.8 not answered (13) PD (11) ET (5) OTJ (41) Mixed (9) N/A (18)
45. Supervise unit members	1 (17) 2 (7) 3 (18) 4 (30) median 3.5 not answered (12) PD (13) ET (4) OTJ (39) Mixed (5) N/A (23)
46. Arrange for reproduction and dissemination of the product	1 (21) 2 (10) 3 (16) 4 (23) median 3.2 not answered (14) PD (8) ET (4) OTJ (39) Mixed (5) N/A (28)

Mean of the medians for management skills: 3.151

COMMUNICATION

47. Counsel with clients, other managers about project matters, plans, designs	1 (8) 2 (5) 3 (14) 4 (46) median 3.8 not answered (11) PD (9) ET (8) OTJ (37) Mixed (11) N/A (19)
48. Inform clients, company, unit about educational technology practices	1 (13) 2 (15) 3 (19) 4 (25) median 3.2 not answered (12) PD (4) ET (24) OTJ (22) Mixed (10) N/A (24)

49. Write proposals, presentations, reports	1 (6) 2 (12) 3 (18) 4 (40) median 3.7 not answered (8) PD (10) ET (16) OTJ (29) Mixed (17) N/A (12)
50. Write journal articles	1 (22) 2 (17) 3 (15) 4 (20) median 2.7 not answered (10) PD (6) ET (30) OTJ (12) Mixed (15) N/A (21)
51. Communicate effectively with personnel to produce desired products/outcomes	1 (9) 2 (3) 3 (19) 4 (44) median 3.8 not answered (9) PD (10) ET (6) OTJ (38) Mixed (13) N/A (17)
52. Lecture or instruct	1 (10) 2 (15) 3 (17) 4 (34) median 3.5 not answered (8) PD (21) ET (18) OTJ (18) Mixed (13) N/A (14)
53. Interact with learners and subject matter specialists to identify needs and pilot test materials	1 (15) 2 (11) 3 (10) 4(39) median 3.654 not answered (9) PD (6) ET (21) OTJ (24) Mixed (14) N/A (19)
54.Act as a knowledge engineer with subject matter specialists	1 (11) 2 (11) 3 (22) 4(29) median 3.4 not answered (11) PD (4) ET (29) OTJ (21) Mixed (9) N/A (21)

Mean of the medians for communication skills: 3.5

PROFESSIONAL DEVELOPMENT

55. Keep up with ET related concepts, theories, research directions	1 (7) 2 (20) 3 (21) 4 (27) median 3.2 not answered (9) PD (0) ET (45) OTJ (12) Mixed (8) N/A (19)

56. Attend conferences, seminars,for professional development	1 (6) 2 (21) 3 (19) 4 (29) median 3.3 not answered (9) PD (4) ET (23) OTJ (26) Mixed (8) N/A (23)
57. Synthesize, develop models and techniques for use on development projects	1 (15) 2 (16) 3 (18) 4(23) median 3.1 not answered (12) PD (0) ET (33) OTJ (18) Mixed (7) N/A (26)
58. Analyse research data related to the unit's activities	1 (16) 2 (19) 3 (20) 4(17) median 2.9 not answered (12) PD (1) ET (42) OTJ (14) Mixed (3) N/A (24)
59. Keep up with current techniques and approaches	1 (5) 2 (13) 3 (15) 4 (43) median 3.7 not answered (8) PD (3) ET (31) OTJ (25) Mixed (8) N/A (17)
60. Design research studies to test existing and new educational technology theories	1 (40) 2 (17) 3 (5) 4 (10) median 1.6 not answered (12) PD (2) ET (43) OTJ (6) Mixed (3) N/A (30)

Mean of the medians for professional development skills: 3.0

The ranking of each skill category by means of the medians is as follows.

(1) Communication skills: 3.466; (2) Evaluation skills: 3.410; (3) Problem identification skills: 3.299; (4) Design skills: 3.294; (5) Management: 3.151; (6) Professional development: 2.965; (7) Resources and Services: 2.109; (8) Production: 1.877.

The top scoring dozen skills (3.5 or better) from the list of 60 provided were:

1. Communication #47 - Counsel with clients, managers, about project matters, plans, designs.(median 3.826)
2. Management #44 - Consult with managers or members of other units. (median 3.756)
3. Communication #51 - Communicate effectively with personnel to produce desired products, outcomes. (median 3.750)
4. Professional dev. #59 - Keep up with current techniques and approaches. (median 3.709)
5. Design #12 - Identify and sequence objectives. (median 3.658)
6. Communication #53- Interact with learners and subject matter specialists to identify needs and pilot test materials. (median 3.654)
7. Communication #49 - Write proposals, presentations, reports.
8. Problem Ident. #8 - Specify product/system standards, goals. (median 3.614)
9. Management #39 - Monitor opportunities to initiate projects. (median 3.565)
10. Design #13- Use instructional development techniques to design a product. (median 3.561)
11. Evaluation #37 - Interpret evaluation data/statistics (median 3.531)
12. Problem identi. #4 - Propose a plan to act on analysis results.(median 3.529)

The responses to these items were also compared to the categories for job types described earlier. The intention was to establish, as is believed, whether certain kinds of practice would favor certain kinds of preparation. The skills groups are rank ordered by importance to each category.

Teachers/Lecturers

Skill area	Median	Mean	Standard deviation	Skewness
Professional development	3.04	2.77	.72	-.65
Evaluation	2.95	2.73	1.11	-.44
Design	2.92	2.90	.54	-1.08
Problem Identification	2.88	2.80	.75	-.60
Communications	2.88	2.68	.83	-.73

Management	1.60	1.99	.94	.70
Production	1.56	1.85	.78	1.33
Resources and Services	1.50	1.78	.82	.87

Instructional Designers/Evaluators

Skill area	Median	Mean	Standard deviation	Skewness
Evaluation	3.64	3.33	.90	-1.26
Design	3.40	3.32	.65	-1.07
Problem Identification	3.22	3.04	.63	-.20
Professional Development	3.17	2.77	.95	-.46
Communications	2.90	2.93	.60	-.25
Resources and Services	1.96	2.12	.98	.90
Production	1.92	2.09	.95	.86
Management	1.63	1.91	.68	.27

Training Project Managers/Consultants

Skill area	Median	Mean	Standard deviation	Skewness
Communications	3.44	3.28	.67	-1.67
Problem Identification	3.27	3.06	.79	-.48
Design	3.19	2.96	.83	-.50
Evaluation	3.13	3.50	1.05	-1.13
Management	3.06	2.91	.89	-.71
Professional Development	2.92	2.81	.69	-.20
Resources and Services	2.08	2.26	1.12	.23
Production	1.81	2.12	1.10	.55

Human Resources Managers

Skill area	Median	Mean	Standard deviation	Skewness
Management	3.25	3.08	.58	-.54
Communications	3.19	3.10	.34	-1.18
Design	3.06	2.94	.61	-.44
Problem Identification	3.03	3.03	.53	-.23
Professional Development	2.58	2.53	.72	-.23
Evaluation	2.29	2.78	1.20	.01
Resources and Services	1.83	2.17	.91	2.35
Production	1.50	2.04	1.05	1.70

Educational Planners/Administrators

Skill area	Median	Mean	Standard deviation	Skewness
Management	3.13	2.93	.64	-.35
Communications	2.94	2.92	.60	-.61
Problem Identification	2.72	2.87	.54	-.06
Professional Development	2.63	2.37	.66	-.05
Evaluation	2.22	2.05	.68	1.18
Resources and Services	2.23	2.21	1.02	.32
Design	2.19	2.30	.85	.11
Production	1.56	1.99	1.05	.98

Other

Skill area	Median	Mean	Standard deviation	Skewness
Management	2.38	2.29	.75	-.49
Communications	2.25	2.25	.25	0
Professional Development	1.83	2.39	1.11	1.69
Production	1.78	1.56	.48	-1.63
Problem Identification	1.63	1.54	.51	-.72

Design	1.63	1.54	.51	-.72
Evaluation	1.29	1.71	1.00	1.57
Resources and Services	1.13	1.17	.29	1.73

It is useful to look at where occupational groups feel they received the skills they most value. The following is a breakdown of occupational groups and the top skill groups for that occupation by frequency and percentage of responses. Skill groups with an importance rating of 2.9 or better are reported.

TEACHERS	Previous degree or job	Ed Tech Program	On the Job	Combo	Total Responses
Professional dev	3(4.3)	46(65.7)	18(25.7)	3(4.3)	70
Evaluation	5(5.3)	67(70.5)	8(8.4)	15(15.9)	95
Design	10(8.7)	80(69.6)	21(18.3)	4(3.5)	115

INSTRUCTIONAL DESIGNERS /EVALUATORS	Previous degree	Ed Tech	On the Job	Combo	Total
Evaluation		58(63.7)	15(16.5)	18(19.8)	91
Design	3(2.8)	58(53.2)	32(29.4)	16(14.6)	109
Problem Identification	7(6.4)	46(41.4)	41(37.3)	16(14.6)	110
Professional Dev		56(78.9)	8(11.3)	7(9.9)	71

TRAINING PROJECT MANAGERS /CONSULTANTS	Previous degree	Ed Tech	On the Job	Combo	Total
Communications	26(16.0)	39(24.1)	69(42.6)	28(17.3)	162
Problem Identification	9(5.7)	68(43.3)	65(41.4)	15(9.5)	157
Evaluation	9(6.2)	101(69.2)	18(12.3)	18(12.3)	146

Design	11(6.8)	102(63.4)	33(20.5)	15(9.3	161
Management	21(13.6)	19(12.3)	107(69.5)	7(4.4)	154
Professional Dev	3(2.6)	64(54.7)	41(35)	9(7.7)	117

HUMAN RESOURCE MANAGERS

	Previous degree	Ed Tech	On the Job	Combo	Total
Management	3(5.8)	14(26.9)	29(55.8)	6(10.3)	52
Communications	5(8.1)	27(43.5)	22(35.5)	8(12.8)	62
Problem Identification	5(7.8)	29(45.3)	27(42.2)	3(4.7)	64
Design	3(6.8)	26(59.1)	11(25)	4(9)	44

EDUCATIONAL PLANNERS

/ADMINISTRATORS	Previous degree or job	Ed Tech Program	On the Job	Combo	Total Responses
Management	8(7.9)	13(12.9)	48(47.5)	32(31.8)	101
Communications	11(9.8)	24(21.4)	35(31.3)	42(37.6	112

17. What skills important to your current job do you feel you are weak in?

Fifty-four different skills were generated by 67 of the 84 respondents. They were categorized as follows.

Management skills: Suitability for this category was judged by specific mention of "management skills", entrepreneurial skills, project management, financial skills (such as costing and budgeting), administration or co-ordination of projects, teams and departments. Examples of some indicators accepted are: "consultation practices and skills", "fee-setting", "budget preparation", "project planning" and "time management".

Front-end skills: all reports citing "needs analysis" or assessment, task or job analysis were included here. Reports of organization or job design, policy-setting, and operations research

were also included as they were taken for indications that the individual, like those in the management category, want to effect the pre-training decision-making areas; unlike the "management types" they might be said to be pro-active rather than reactive.

Communication skills: This category includes those who see written and interpersonal ("people") skills as their biggest weakness. The indicators include reports such as "diplomacy", "flesh-pressing" , "writing", "networking" and "negotiation".

Educational Technology skills: This name was given to a category of skills that we might think of as being in areas to which a good share of department resources are already allocated. Courses that address these topics are already an obvious part of the existing curriculum from which it can be extrapolated that people either did not elect to take these courses while in the program or the courses were not available in their time. Another explanation may be that they simply feel they need more experience in these areas in order to be comfortable in their jobs. Some examples of reports that were included here are: "evaluation methodologies", "selection of appropriate materials for clients", "use of computers", "curriculum development" and "software design".

Other: Placed in this category were skills that might be considered out of the bounds of the program by any stretch of the current mandate, blank items, comments not addressing any type of skill in particular, and skills difficult to place. Some example remarks are: "marketing", "sales" and "none in particular".
They break down as follows.

First weakness mentioned	Frequency	Relative frequency percentage
management	19	22.6
front-end skills	14	16.7
communication	11	13.1
ed. tech.	8	9.5
other	32	38.1

Second weakness mentioned	Frequency	Relative frequency percentage
management	9	10.5
ed. tech.	5	6.0
front-end skills	2	2.4
communication	0	0
other	68	81.0

Third weakness mentioned	Frequency	Relative frequency percentage
management	4	4.8
front-end skills	0	0
communication	1	1.2
ed. tech.	1	1.2
other	78	92.9

18.A What skills do you feel are important to advance your career in general?

Fifty-five different skills needed for advancement were generated by 68 of the 84 respondents.
They were categorized using the same groupings as the skill weaknesses so that these responses could be used to substantiate the information gathered in the previous item. Some examples of responses typical of each category are given below.

Management skills: "planning", "human resources management", "long term strategic planning and policy", "strategies" and as given previously.

Front-end skills: "analytical, cybernetic modeling", "research", "job analysis" and as given previously.

Communication: "public speaking", "human relations", "assertiveness training" and as given previously.

Educational Technology: "CAL production", "ETV development", "more theory", "writing journal articles", "instructional design", "doctoral degree", etc.

Other: "being in the right place at the right time", "word processing skills", " creativity" and blank items.

The breakdown was as follows.

First skill mentioned	Frequency	Relative frequency percentage
management	18	21.4
front-end skills	9	10.7
communication	17	20.2
ed. tech.	8	9.5
other/not answered	32	38.1

Second skill mentioned	Frequency	Relative frequency percentage
management	6	7.1
front-end skills	2	2.4
communication	7	8.3
ed. tech.	6	7.1
other/not answered	63	75.0

Third skill mentioned	Frequency	Relative frequency percentage
management	1	1.2
front-end skills	4	4.8
communication	2	2.4
ed. tech.	1	1.2
other	76	90.5

B. What do you mean by advance; what area of skills are you planning to move into?

Thirty-nine different areas were identified by 54 of the 84 respondents and were organized to correspond to "front-end" and "management" skills but allow for a broader interpretation of "front-end" to include policy-setting and similiar interests.

	Frequency	Relative frequency percentage
management	19	22.6
front-end	13	15.5
educational technology specialty	11	13.1
other	11	13.1
not answered	30	35.7

19. Have you gone about acquiring the skills you need formally or informally? Explain.

Sixty-two of the 84 respondents answered this question and the responses were categorized as follows.
Formal: these individuals are taking courses in accredited programs.
Informal: these individuals are reading, networking and/or looking for opportunities on the job to learn and practice the skills they need.

N/A: Neither/not applicable/not answered.

Acquiring skills	Frequency	Relative frequency percentage
formally	20	23.8
informally	25	29.8
N/A	39	46.4

20. How instrumental were you in defining your own job?

1 (7)	2 (13)	3 (28)	4 (24)	N/A (12)
not very			very instrumental	
relative frequency percentage				
(8.3)	(15.5)	(33.3)	(28.6)	(14.3)

median (3.3)

21.The next series of questions have to do with how your work environment lends itself to educational technology practices and what success have you had in influencing your environment in terms of gaining acceptance of these practices. How would you rate your success at improving your organization by gaining acceptance for educational technology methodologies?

low			very satisfactory	
1 (11)	2 (23)	3 (24)	4 (7)	N/A (19)
relative frequency percentage				
(13.1)	(27.4)	(28.6)	(8.3)	

median (2.8)

22.A. My work environment, in terms of receptivity to change, is

Conservative		Moderate		Progressive	
1 (17)	2 (11)	3 (23)	4 (12)	5 (12)	N/A (9)
relative frequency percentage					
(20.2)	(13.1)	(27.4)	(14.3)	(14.3)	
median (3.1)					

B. To what extent is any conservatism a function of finances (as they see it)?

Not to do with it			Much to do with it	
1 (14)	2 (14)	3 (17)	4 (28)	N/A (11)
relative frequency percentage				
(16.7)	(16.7)	(20.2)	(33.3)	
median (3.3)				

C. To what extent is any conservatism a function of organizational structure and management?

Not to do with it			Much to do with it	
1 (3)	2 (7)	3 (21)	4 (40)	N/A (13)
relative frequency percentage				
(3.6)	(8.3)	(25.0)	(47.6)	
median (3.8)				

23. A. Number of other educational technologists in the unit:

	Frequency	Relative frequency percentage
none	40	47.6
1 - 4	24	28.6
5 - 10	3	3.6

11 or more	1	1.2
not answered/applic.	16	19.1

B. Number of other educational technologists in the company

	Frequency	Relative frequency percentage
none	30	35.7
2	3	
3	5	
4	6	
5	3	
6	1	(38.1 % work with some)
8	4	
9	2	
10	4	
15	2	
20	1	
50	1	
NA	22	26.2

24. PROGRAM EMPHASIS: Check off one, two or three (no more than three) of the following areas to indicate what you believe the emphasis of the program is (given course offerings and required components), regardless of your particular concentration.

First chosen emphasis:	Frequency	Relative frequency percentage
Design	32	38.1
there is no emphasis; general approach	13	15.5
Problem Identification	8	9.5
Production	6	7.1

Evaluation	3	3.6
Management	1	1.2
Communication	0	0
Professional Development /Research	1	1.2
not answered	20	23.8

Second chosen emphasis:	Frequency	Relative frequency percentage
Production	21	25.0
Evaluation	12	14.3
Design	5	6.0
Professional Development /Research	4	4.8
Management	3	3.6
Communication	1	1.2
Problem Identification	0	0
there is no emphasis; general approach	0	0
not answered	38	45.2

Third chosen emphasis:	Frequency	Relative frequency percentage
Evaluation	15	17.9
Professional Development /Research	9	10.7
Communication	4	4.8
Production	3	3.6
Management	2	2.4
Problem Identification	0	0
Design	0	0
there is no emphasis; general approach	0	0
not answered	51	60.7

25. I have applied for jobs that I did not get.

	Frequency	Relative frequency percentage
True	48	57.1
False	26	31.0
not answered	10	11.9

I think the reason was a skill deficiency

	Frequency	Relative frequency percentage
True	8	9.5
False	39	46.4
not answered	11	13.1
not applicable	26	31.0

Explain

Reasons given for not getting a job ranged over 25 types, which have been classified as follows.

Reason	Frequency	Relative frequency percentage
Experience deficiency	17	20.2
Stiff competition	5	6.0
Company didn't understand degree	4	4.8
Lack of non-ed tech knowledge	3	3.6
Lack of self-marketing techniques	2	2.4
Degree not technical enough	2	2.4
Other reasons	5	6.0
Not applicable	23	27.4
Not answered	23	27.4

26.Please RANK the graduate program experiences you had in terms of degree of usefulness to you.

First ranked program component:	Frequency	Relative frequency percentage
coursework	32	38.1
thesis/equivalent	18	21.4
the total (synergistic) experience	10	11.9
internship	8	9.5
largely unstructured events	6	7.1
research assistantship	1	1.2
teaching assistantship	0	0
colloquiums	0	0
other	0	0
not answered	9	10.7

Second ranked program component:	Frequency	Relative frequency percentage
thesis/equivalent	18	21.4
internship	18	21.4
coursework	15	17.9
largely unstructured events	8	9.5
the total (synergistic) experience	6	7.1
teaching assistantship	4	4.8
research assistantship	2	2.4
colloquiums	2	2.4
other	0	0
not answered	11	13.1

Third ranked program component:	Frequency	Relative frequency %
internship	16	19.1
coursework	12	14.3
thesis/equivalent	12	14.3
largely unstructured events	10	11.9
the total (synergistic) experience	8	9.5
research assistantship	5	6.0
teaching assistantship	3	3.6
colloquiums	2	2.4
other	0	0
not answered	16	19.0

27. Looking over the above components, which ones have had the best long-term transfer as far as you are concerned?

First choice:	Frequency	Relative frequency %
thesis/equivalent	16	19.1
coursework	15	17.9
unstructured events	7	8.3
all components	7	8.4
internship	5	6.0
cybernetic-oriented courses	4	4.8
instructional design	3	3.6
other	11	13.2
not answered	16	19.1

Second choice	Frequency	Relative frequency %
internship	9	10.7
all components	6	7.2
thesis/equivalent	5	6.0
coursework	5	6.0
unstructured events	3	3.6
teaching assistantship	3	3.6
other	6	7.2
not answered	47	56.0

Third choice:	Frequency	Relative frequency percentage
thesis/equivalent	2	2.4
coursework	2	2.4
other	8	9.6
not answered	72	85.7

Why do they have the best transfer?

Forty-one different reasons were given for favoring particular components by a total of 54 of the 84 respondents. Reasons for the "transferability" of these elements were, in some but not all cases, clearly connected to the person's occupation. The tone of other explanations seemed to have more to do with the kind of learning the person needed to round out their education, as opposed to utilitarian views of their professional preparation. Perhaps the most useful report of this kind of information is simply to summarize the typical reasons given for perceiving the transfer value of the most highly valued components.

The Thesis or Thesis Equivalent

Participants tend to value the self-designed nature of a research exercise, and the in-depth analysis, methodology andwriting related to both options in this component. It was seen as a long, integrated process requiring great intellectual involvement and dedication. The exercise allowed problem-solving to come together. The kind of knowledge and experience acquired was seen to be comprehensive, the "basic systemic analysis and design (serving) in all jobs" (subject).

Coursework

Different reasons were given for the transfer value of core courses and elective courses (which would tend to be associated with the type of work done after the program). Core courses, and sometimes specific courses like cybernetics, or specific theories like conversation theory, were credited for changing "thinking" and approaches to "problems and projects". Theories are useful for "preparing arguments and coaching staff". Production and instructional design courses were readily applied in the workplace, easily relating to job tasks.

Internship

Reasons for the internship's "transferability" were much the same as those given for "practical" coursework: an experience they could easily apply to the job. It provided an opportunity to put theories to practice, and was credited for "career change success". However, reasons seemed to have more to do with transfer than 'long-term'.

28. and which ones do you feel are becoming particularly obsolete?

	Frequency	Relative frequency percentage
none	15	17.9
thesis/equivalent	4	4.8
all coursework	4	4.8
internship	4	4.8
other	22	26.4
not answered	35	41.7

The "other" category included "unstructured events with students and faculty", research and teaching assitantships, colloquiums, and specific courses such as "TV course". While every component that was found to be transferable for someone was mentioned as obsolete by another, the major program components were cited infrequently.

Why are they obsolete?

Twenty-nine reasons were used by the 34 people responding to this item. Not included in a breakdown of this category are: obvious reasons why "unstructured events with students and faculty" is obsolete; and reasons that seem to indicate that respondents were not clear on the exact meaning of "obsolete", such as: "research assistantships are cheap labor" and "content of some courses seems to overlap".

Reasons for the surprise (added) category "None" (are obsolete) can be summed up by a couple of typical comments " all part of a good graduate program" and "no education is obsolete at all times".

Thesis/Thesis Equivalent

The limited value of the thesis seems to lie in its academic, as versus business-world, focus. It is seen as time-consuming, too narrow, too specific, too empirical, and "mastery can be proven alternately". Clearly, those who consider the thesis obsolete or narrow did not see an alternative to standard models of the exercise.

Coursework

Coursework is seen as having to be constantly updated, as being unintegrated.

Internships

Reasons were basically that the purpose of internships was not clear, or that the component was not used to best effect.

29.Would you change the emphasis/concentration you took in the degree program?

	Frequency	Relative frequency percentage
yes, significantly	11	13.1
yes, somewhat	20	23.8
no, not much	28	33.3
not at all	12	14.3
not answered	13	15.5

If you answered 1 or 2 explain how.

Eighteen various reasons were given by 30 respondents, and they were organized as follows.

	Frequency	Relative frequency %
more practical coursework	5	6.0
more careful selection of courses	5	6.0
more computer courses	4	4.8
more systems/management courses	3	3.6
more evaluation	2	2.4
more ID	2	2.4
change option B to A	2	2.4
other	7	8.4
not answered/not applicable	54	64.3

Most dissatisfaction is associated with course selection.

30.Estimate the effects of the thesis component and degree completion (whether you have finished or not):

A.As far as my employer is concerned, finishing was/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5
(Frequency)(Percentage)				
0	(2)(2.4)	(13)(15.5)	(12)(14.3)	(44)(52.4)

Not answered/applicable (13)(15.5)

median (4.9)

B. Check one or both: It would increase my chances of

	Frequency	Relative frequency percentage
Promotion	10	11.9
Raise	11	13.1
Both	33	39.3
not answered/applicable	30	34.8

31. In terms of how well I feel I do my job, finishing was/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5
(Frequency)(Percentage)				
0	0	(17)(20.2)	(15)(17.9)	(39)(46.4)

Not answered/applicable (13)(15.5)

median (4.8)

32. In terms of my future plans, finishing will/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5
(Frequency)(Percentage)				
0	0	(2)(2.4)	(11)(13.1)	(56)(66.7)

Not answered/applicable (16)19.1)
median (4.9)

Section III: Unemployment

This section was meant to treat in part the question of undesirable outcomes, the most extreme being unemployment. The concept of unemployment here also includes those who are employed in jobs where they do not practice educational technology. Of the few that are unemployed in this special sense, even fewer are unemployed in the conventional sense.

33.If you are not now or never have been employed in an educational technology related field, please answer the following section:

I have looked for educational technology related work
True 2
False 3
not applicable 79

34. What is your primary present activity?
working but not using educational technology skills (2)
continuation of formal education (1)
unemployed and starting a job soon (0)
unemployed and actively seeking employment (1)
unemployed, not seeking employment, but plan to later (0)
unemployed and do not intend to work in the forseeable future (1)
not applicable (79)

35. Which of the following do you see as the single biggest problem you have had finding work in an educational technology capacity:

skill qualifications (0)
educational qualifications (0)
a tight job market in the field (1)
a generally tight job market (0)
finding a job where I want to live (0)
finding a job with the salary I expect (0)
finding the right educational technology job (0)
sex discrimination (1)
race discrimination (0)
Other. Explain (0)
not answered (3)
not applicable (79)

36. How long have you been actively seeking employment?

1-5 months (1)
6-12 months (0)
over a year (0)
not answered (2)
not applicable (81)

37. Do you expect to be employed within the next year?

yes (2)
no (1)
not answered (2)
not applicable (79)

Section IV: Program Characterization

More descriptive data is gathered about aspects of the program which seem appropriate to address in this section. However, it was principally designed to help answer the following research questions. Do the roles they have reflect their intentions and expectations as students as reflected by the concentrationa and options taken? Do various roles reflect the changing nature of the evolving curriculum?

38. (A and B. were combined to provide the following information).

I have completed all reqirements for the Master's degree, etc.

	Frequency	Relative frequency percentage
completed MA	61	72.6
thesis to do	16	19.0
(ET PhD student)	3	3.6)
not answered	4	4.8

38.C. For those who have not finished the thesis, the status of that activity is reported.

	Frequency	Relative frequency percentage
now working on my thesis	14	16.7
not working on my thesis now, but I intend to finish.	3	3.6
no wered	3	3.6
ot applicable	64	76.2

39. I entered the program in:		**stopped close association in:**	
year	frequency	year	frequency
1968	4	1972	4
1969	2	1973	2
1970	2	1974	0
1971	2	1975	1
1972	2	1976	0
1973	3	1977	4
1974	1	1978	1
1975	3	1979	2
1976	3	1980	5
1977	4	1981	2
1978	5	1982	4
1979	7	1983	4
1980	4	1984	6
1981	9	1985	13
1982	9	1986	10
1983	6	1987	8
1984	10	not answered	18
1985	1		
not answered	7		

The responses here were categorized as pre-1979 and post 1979. In 1979 the program began to shift from a strongly production-oriented program to a more 'generalist' approach.

Entered	Frequency	Relative frequency percentage
before 1979	31	36.9
1979 & after	46	49.0
not answered	7	8.3

Graduated

before 1979	12	14.3
1979 & after	54	64.3
not answered	18	21.4

40. I was a

	Frequency	Relative frequency %
full-time student throughout this period	38	45.2
part-time student for at least part of this period	38	45.2
not answered	8	9.5

If you were part-time, why?

Reasons given for being a part-time student were categorized as follows.

	Frequency	Relative frequency %
worked full-time	21	25.0
financial reasons	6	7.1
children, home-making	7	8.3
not answered	12	14.3
not applicable	38	45.2

41.My degree was financed largely

	Frequency	Relative frequency %
by my own, my family's means	44	52.4
through student loans	13	15.5
by my organization	12	14.3
through TA or Research Assistantships	3	3.6
scholarships	4	4.8

Canada Council or FCAC	3	3.6
other. Explain	0	
unanswered	5	6.0

42. a.Your thesis was

	Frequency	Relative frequency %
production/evaluation	33	39.3
experimental	26	30.1
theoretical	9	10.7
case study	2	2.4
not applicable	5	6.0
not answered	9	10.7

This information can also be viewed as:

	Frequency	Relative frequency %
Option A	37	44.0
Option B	33	39.3
not answered	14	16.7

b. Estimated time spent on your COMPLETED thesis

Months	Frequency	Relative frequency percentage
6 or less	19	22.7
7 to 12	31	37.0
13 to 24	15	17.9
25 to 36	5	6.0
not answered	14	16.7

c. Indicate whether you worked on it

	Frequency	Relative frequency percentage
Full-time	26	31.0
Part-time	44	52.4
N/A	14	16.7

43. Please circle the thirteen (or more) courses that you took

The purpose of this question was to establish for each individual what their concentration in the program was: production, computer, general, or general with planning.

CORE
100 604 Fundamentals of Educational Technology
101 607 Philosophical Aspects/Educational Technology
102 606 Educational Cybernetics
103 640 Quantitative Methods and Research Design I
104 641 Quantitative Methods and Research Design II
105 613 Learning and Instructional Theories
106 654 Instructional Design
107 643 Measurement and Evaluation in Education

COMPUTER
300 637 Educational Simulation and Gaming
301 662 Computer-based Systems in Education and Training
302 695 Topics in Instructional Informatics I
303 696 Topics in Instructional Informatics II
304 660 Introduction to Educational Computing
305 663 Small Computer Systems for Teachers and Trainers
306 664 Computer-assisted Instruction
307 665 Modeling, Simulation and Intelligent Tutoring Systems

PRODUCTION
200 623 Planning and Producing Audio-visual Materials
201 624 Theory of the Moving Image
202 681 Seminar on Research and Writing for Audio / Video and Computer Media
203 682 Lab in Studio Television Production and Evaluation for Education
204 683 Lab in Studio Television Production and Evaluation for Education II
205 684 Lab in Small Format Television Production
206 685 Lab in Audio Production and Evaluation
207 686 Lab in Motion Picture Production and Evaluation
208 636 Formative Evaluation of Educational Materials
209 642 Research and Evaluation in Educational Media
210 635 Principles of Educational Message Design

PLANNING
400 593 Management of Learning Resources
401 653 Educational Systems Analysis
402 701 Administration of Educational Technolcgy Units for Education and Training
403 651 The Concept of Educational Planning
404 652 Educational Planning: a Comparative Perspective

700 673 Selected Topics in Instructional Technology

500 611 Psychological Foundations of Educational Technology
501 631 Curriculum Design

for Adult Learner
701 616 Research and Theory in Adult Learning
702 691Advanced Readings and Research in Technology I
703 691Advanced Readings and Research in Educational Technology II
704 693 Special Issues in Educational Technology
705 632 Topics in Curriculum and Instruction I

600 622 Mass Communications Research
601 655 Educational Technology in Educational Developing Nations
602 702 Development and Organization of Distance Education
603 614 Human Communications I
604 615 Human Communications I I
605 602 Educational Technology and Society

Other: [0]
If you chose a 700 number, what was the topic you concentrated on? (this was used to help determine the person's "program profile")

699 Supervised Internship
690 Thesis or Thesis Equivalent

With this information it was possible to distinguish the concentrations favored by each student, and these were ordered into four categories: "production"," computers", "general", and "general with planning" courses. A case was placed according to the predominance of electives in a particular area, such as production or computers. The general category was for those cases that took courses in most areas. General with planning describes anyone who took more than one elective course from those listed in the 400 sector above. These electives are perceived as being those with the broadest perspective, and in some manner addressing management, administrative and mega-design issues.

	Frequency	Relative frequency percentage
production	29	34.5
general	28	33.3
general with planning	10	11.9
computer	9	10.7
not answered	8	9.5

44. Are there any courses that you regret not taking (please explain).

Respondents who regretted not taking more

	Frequency	Relative frequency percentage
production courses	8	9.5
more instructional design courses	4	4.8
computer courses	8	9.5
planning courses	2	2.4
other	7	4.8
no regrets	11	13.1
not answered	44	52.4

45. Explain your internship.

Sixty-three different types of internship were reported by 74 of the 84 respondents. They were classified in two ways: first by type of location; second, by type of work.

Location of Internship

School setting: any public school setting from elementary to university.
Concordia University: theses done in the department, usually contributing to courses, research or conferences.
Large corporations: some examples are CN Rail, Bell Canada, aerospace industry.
Other/assorted: This category includes internships done under the umbrella of such organizations as the YMCA , a medical unit of the Montreal General and the National Research Council.

Setting of internship work	Frequency	Relative frequency percentage
school setting	20	23.8
Concordia University	16	19.0
large corporations	12	14.3
other/assorted	17	20.2
exempt/not answered	19	22.6

Included in the exempt/pro tanto category below, are those who had their teaching work accepted as an internship, and those who were in the program before an internship existed.

Type of Internship Work	Frequency	Relative frequency percentage
instructional design & production	30	35.7
needs analysis	5	6.0
research	7	8.3
other	16	19.0
exempt, pro tanto	15	17.9
not answered	11	13.1

46 . It (the internship) was

	Frequency	Relative frequency percentage
unfunded	18	21.4
salaried	45	53.6
honorarium	7	8.3
not answered	14	16.7

47. It (the internship) was

	Frequency	Relative frequency percentage
created myself	41	48.8
advertised/obtained through faculty	28	34.5
not applic. not answered	15	17.9

48. I secured my first educational technology related job

	Frequency	Relative frequency percentage
directly through my internship	13	15.5
while I was still enrolled and before I completed my thesis	23	27.4
after I graduated	13	16.7
I returned to the same job	12	14.3
not applic. not answered	23	27.4

So about 43% had a job before leaving the program.

49. Select appropriate answer. Completing the program

Completion time	Frequency	Relative frequency percentage
took less time than I expected	3	3.6
about as long as I expected	36	42.9
longer than I expected	33	39.3
not answered	12	14.3

If it took longer than expected,why, do you think?

For the 33 relevant cases, seventeen different responses were given to this question. The reasons were categorized as: job/financially related (where it may be assumed program requirements seem fair, but the necessity to be part-time is the hinderance), complaints

about the course load demands (where course load demands are seen to be unreasonable), thesis-related complaints (where heavy requirements, lack of faculty advice and supervision, and difficulty in choice of topic all figure) and other (which includes personal problems, demands of family, etc.).

Reasons for length	Frequency	Relative frequency % (from 33)
work/financial	14	42.4
thesis complaints	9	27.3
heavy course requirements	7	21.2
other	4	9.1
not answered	11	13.1

Section V: Attitudes

This section is composed of standard questions used in program evaluation studies to describe participants attitudes towards the program, university, and general values.

50.Regardless of the program itself, do you think these aspects were an important benefit to you?

A. attending university or being in touch with the university

	Frequency	Relative frequency percentage
definitely yes	71	84.5
probably yes	6	7.1
not really	3	3.6
definitely not	0	
not answered	4	4.8

B. studying issues raised in educational technology

	Frequency	Relative frequency percentage
definitely yes	64	76.2
probably yes	9	10.7
not really	4	4.8
definitely not	0	
not answered	7	8.4

51. Circle the number preceeding NOT MORE THAN 3 FACTORS that best characterize the life style you have valued: (Dale, 1975)

First choice	Frequency	Relative frequency %
good family relationships	52	61.9
good and interesting friends	9	10.7
freedom to pursue your own interests	7	8.3
steady, secure employment	7	8.3
freedom from financial worry	4	4.8
a challenging job	4	4.8
opportunities for meaningful work	1	1.2
favorable geographic location	0	
access to art institutes, literature, culture	0	
not answered	0	

Second choice	Frequency	Relative frequency %
freedom to pursue your own interests	30	35.7
opportunities for meaningful work	21	25.0
freedom from financial worry	13	15.5
good and interesting friends	8	9.5
steady, secure employment	6	7.1
a challenging job	6	7.1
good family relationships	0	
favorable geographic location	0	
access to art institutes, literature, culture	0	
not answered	0	

Third choice	Frequency	Relative frequency %
a challenging job	32	38.1
opportunities for meaningful work	24	28.6
freedom to pursue your own interests	8	9.5
good and interesting friends	7	8.3
freedom from financial worry	4	4.8
access to art institutes, literature, culture	4	4.8
favorable geographic location	3	3.6
good family relationships	1	1.2
steady, secure employment	0	
not answered	1	1.2

52.Listed below are some of the reasons people pursue degrees. Please rank them in the order of their importance to you at the time you entered the program. (Dale, 1975; Reichard & Sutton, 1978)

First choice	Frequency	Relative frequency %
to prepare myself for a new career	34	40.5
to broaden my intellectual or cultural awareness	18	21.5
to add to skills /move up in my existing career	17	20.2
to be able to make more money	5	6.0
to move into a particular job market	4	4.8
to prepare for further graduate or professional education	2	2.4
other	0	
not answered	4	4.8

Second choice	Frequency	Relative frequency %
to broaden my intellectual or cultural awareness	21	25.0
to move into a particular job market	20	23.8
to add to skills /move up in my existing career	12	14.3
to be able to make more money	9	10.7
to prepare for further graduate or professional education	8	9.5
to prepare myself for a new career	7	8.3
other	0	
not answered	7	8.3

Third choice	Frequency	Relative frequency %
to move into a particular job market	18	21.4
to broaden my intellectual or cultural awareness	17	20.2
to be able to make more money	16	19.0
to add to skills /move up in my existing career	10	11.9
to prepare myself for a new career	8	9.5
to prepare for further graduate or professional education	5	6.0
other	0	
not answered	10	11.9

Section VI: Program Expectations

This section was used to describe: strengths and weaknesses of their professional development; expectations about, and directions for, the program; perceived need for faculty guidance in career planning; and general comments about topics not addressed.

53. A. How clear were you when you entered the program on the future you wanted to pursue?

1	2	3	4	
Not clear			very clear	
(frequency)(percentage)				
(11)(13.1)	(16)(19.0)	(35)(41.7)	(19)(22.6)	N/A(3)(3.6)

median (2.9)

B. How clear were you when you finished or left the program on the future you wanted to pursue?

1	2	3	4	
Not clear			very clear	
(frequency)(percentage)				
(3)(3.6)	(7)(8.3)	(33)(39.3)	(39)(46.4)	N/A(2)(2.4)

median (3.5)

C. In retrospect, what kind of idea did you have about how course options related to future options?

1	2	3	4	
Not clear			very clear	
(frequency)(percentage)				
(11)(13.1)	(28)(33.3)	(31)(36.9)	(10)(11.9)	N/A(4)(4.8)

median (2.6)

54. How did the job opportunities you found in the educational technology field match your expectations?

1	2	3	4	
not nearly as good			much better than	
as I expected			I expected	
(frequency)(percentage)				
(10)(11.9)	(21)(25.0)	(31)(36.9)	(17)(20.2)	N/A(5)(6.0)

median (2.9)

55. How much do you think having a good ed. tech job depends on being flexible about where you live?

1	2	3	4	
not at all			very much	
(frequency)(percentage)				
(3)(3.6)	(19)(22.6)	(26)(31.0)	(31)(36.9)	N/A(5)(6.0)

median (3.3)

56. It is possible now to get the master's degree with an extended internship with report relating your work to theory. Would you have taken this option had it been offered then?

1	2	3	4	
very unlikely			very likely	
(frequency)(percentage)				
(21)(25.0)	(9)(10.7)	(13)(15.5)	(33)(39.3)	N/A(8)(9.5)

median (3.5)

57. Instructional Design is now a required course and there are two levels offered. Judging from the course list you may notice other changes in the curriculum since your time; are they in the right direction? What do you think direction should be? Comments please.

Fifty-two different answers were submitted by fifty-eight of 84 respondents. These have been categorized as follows.

Management: In this category are: all comments that management tools (as established for previous categories) and/or courses that address a broader control on organizational problem identification and decision-making, should be given a larger share of department resources. The comments address course content. Some examples are "need more emphasis on pro-active and management type training", "MBA courses should be accepted as course substitutes", "emphasize project management, budget and organization".

Practical Experience: this includes all approvals or suggestions for dealing with other needs of practitioners in industry, hand-on projects, department-industry collaboration, business-like undertakings by the department, and suggestions for improving internships along this general line. The comments characteristically do not address course content, but a rather more "experiential" learning environment or event. However, the thrust might be viewed as a desire for types of competence which will serve in the non-academic

workplace, a stepping stone to project management positions. Some edited typical remarks in this category are: "participation in project development should be offered", "need more emphasis on medium scale project development schemes", and "more joint business-university undertakings".

Minor: is a category where largely approving comments and various minor criticisms were placed. Some examples are: "instructional design should be compulsory", "students should each have a mentor", "emphasis on CBI is good, but video facillities are under-used", "the program should remain general".

Other: in this category were placed the "not answered", the "no comments", and subjects who participated in the pre-survey where this question was not used on the instrument.

Direction should be to	Frequency	Relative frequency %
minor suggestions	18	21.4
practical	16	19.1
management	15	17.9
other/not answered	35	41.7

58. If you could start over again would you choose to pursue an educational technology degree?

	Frequency	Relative frequency percentage
yes definitely	31	36.9
yes probably	37	44.0
probably not	9	10.7
definitely not	5	6.0
not answered	2	2.4

59. If you answered 1 or 2, would you do it at Concordia U.?

	Frequency	Relative frequency %
yes	50	59.5
there is little other choice for me	16	19.0
no, I would make an effort to go elsewhere	3	3.6
not answered	15	17.9

If you answered 3 or 4,what would you do?

Eleven alternatives were generated by 14 of the 84 respondents. Among the alternatives submitted were: business administration, educational studies, law , computer studies, feminist therapy and botony (because plants have more patience).

60.What are the greatest strengths and weakness of the program?

Strengths

Fifty-six strengths were reported by 65 of the 84 respondents. These aspects were organized into four categories.

Diversity of Curriculum: a category representing strengths that focus on the flexibility of the program structure and the multi-disciplinary nature and comprehensiveness of the curriculum and faculty interests. Some examples of accepted responses: "good balance between theory and application", "good multi-disciplinary approach", "its total perspective", "good introduction to the entire field", "synthesis of areas of study".

Staff & Students: consisting of references to these people resources such as: "enthusiastic, innovative, creative staff", "teacher availability", "interesting fellow students", "richness of faculty and student interests".

Theory: reflects the academic standards and intellectual stimulation provided by the program. Some examples of accepted responses: "experimental research and research emphasis", "cybernetics and systems approach", "theoretical preparation".

Practical: including favorable assessment of the professional and "hands-on" aspects of the program. Some examples of accepted responses: "media production and facilities", "good practical bias", "prepares well for the job market", "instructors were also practitioners".

Other: Cases of outlying responses "provides experience with rigid structures", "summer program", "one of the best reputations in the world".

First listed	Frequency	Relative frequency %
diversity of curriculum	28	33.3
staff & students	18	21.4
theory	12	14.3
practical	9	10.7
other/not answered	17	20.2

Second listed	Frequency	Relative frequency %
staff & students	17	20.2
diversity of curriculum	11	13.1
practical	7	8.3
theory	4	4.8
other/not answered	45	53.6

Third listed	Frequency	Relative frequency %
theory	6	7.1
staff & students	6	7.1
diversity of curriculum	4	4.8
practical	3	3.6
other/not answered	65	77.4

Weaknesses

Seventy-five weaknesses were reported by 68 of the 84 respondents. They were organized into three broad categories:

Department: represents all complaints about the department resources, staff and organization. Some example comments accepted in this category are: "tenured professors", "over-worked faculty", "students are abandoned after courses completed", "standards aren't clear", "profs suffer from publish or perish syndrome and tend to use students for their own interests", "organization poor", "internal politics detract ", "systems talk, hierachical action".

Curriculum: refers to weaknesses in the curriculum offerings, structure and length of the program. Examples of some reports in this category are: "no proper integration of courses", "too academic in orientation", "uneven quality of thesis work", "thesis is equivalent to a PhD", "management type educational technology is not mandatory", "program lacks focus", "program is not designed to apply what it teaches".

Professional links: encompasses complaints about the lack of relevance of the experimental thesis, theory emphasis, lack of practical projects and links to business, isolation of the program within the university and industrial community. These cases were perceived to have in common a preferance for a very "practical" professional development.

Other: some examples of those comments difficult to place are: "people weren't sure

what the program should offer", "placing educational technology in a systems engineering context", "too British in outlook, needs to be more aware of U.S. developments".

First listed	Frequency	Relative frequency %
Departmental	27	32.2
Professional links	19	22.6
Curriculum	16	19.0
Other	6	7.1
Not answered	16	19.0

Second listed	Frequency	Relative frequency %
Departmental	17	20.2
Professional links	14	16.7
Curriculum	3	3.6
Other	0	
Not answered	50	59.5

Third listed	Frequency	Relative frequency %
Professional links	6	7.1
Departmental	6	7.1
Curriculum	5	6.0
Other	0	
Not answered	67	79.8

61.A How necessary do you think it is to provide more formal guidance through the program?

1	2	3	4	5
not necessary		could be more done		much more guidance
(frequency)(percentage)				
(4)(4.8)	(9)(10.7)	(21)(25.0)	(22)(26.2)	(17)(20.2)

Not answered (11)(13.1)
median (3.9)

B. Do you think the ED TECH department itself should take a more active role in initiating graduates into the "market"?

1	2	3	4	5
not necessary		could be more done		much more guidance
(frequency)(percentage)				
(5)(6.0)	(15)(17.9)	(22)(26.2)	(17)(20.2)	(14)(16.7)

Not answered (11)(13.1)
median (3.5)

62. Is there anything you would like to expand on in relation to your professional preparation, personal satisfaction and the field of educational technology that you feel may be useful ?

Fifty-three of the 84 respondents made comments here. People often used the "comments" section to expand on the strengths and weaknesses in the program, or on question number 57, "What do you think the direction of the program should be?" and so was used to decide on the dominant issues expressed in those cases, if there was any doubt. Frequently this section and in rare cases, other sections were used to offer specific suggestions for improvement and change: it is these comments only that will be reported in this section..

1. An alumni consulting committee should be formed to meet once or twice a year to advise the department similiar to the ed tech grad committee that used to meet.

2. Bring people in from the production industries to meet and consult with the students and faculty.

3. A greater effort must be made to associate the faculty with the business community.

4. There should be working relationships with other departments, i.e. communications, computer science.

5. A serious assessment is required to ascertain what training is most practical. Most graduates want good jobs and it is the responsibility of the department to ensure that they are adequately prepared.

6. The university should act as a relations officer to market its product, the graduate. Why are non-profit organizations such as school reluctant to employ ed techs as teachers... I think the university ought to express its concern to the provincial government to recognize ed tech grads.

7. Companies don't know what ed tech is and what we can do with an MA. The department should have a brochure that they can send to companies explaining the program, its strengths etc.

8. (The program needs) a more effective orientation or curriculum design based on whether the student is pursuing a research career or one in production.

9. I would have welcomed help, workshop, better networking system to assist in getting a job.The ed tech identity crisis is not easy to deal with when one assumes a job will be awaiting one. A graduate can easily assume few will have heard of ed tech and even fewer will understand or appreciate what it entails or offers. Faculty members are unaware of this problem but could become more aware of the real marketplace if they were to offer a bonefide internship program. The question remains as to the point at which point faculty responsibility ends.

10. The idea of keeping in contact with one another is essential....There should be an electronic bulletin board set up; messages should be exchanged electronically over a wide area network. Teleconferencing should be implemented.

11. We need Layman's Guide to the Benefits of Ed Tech to be sent to all the Ministers of Education, colleges, universities, school board heads.

12. Match training to the descriptions of the positions being targeted.

13. Provide good pre- and post-program counselling.

14. Greater emphasis needs to be placed on technical skills, use of computer and word processor games, everything that will prepare grads for the technological aspects of education.

15. Guidance is needed, especially that given by the students in the program.

16. Let's see more problem identification, analytical tools and better support systems built into the program.

17. One thing lacking was any attempt to link the results of ed tech interventions to the bottom line of a company. A broader concept of evaluation could be introduced. Management skills are also something I find lacking..

18. (The program needs) more courses related to adults as learners.

19. We should have more opportunity to develop our own individual projects of interest ....

20. Some preparation for selling one's expertise and skills in the market would be most helpful.

21. There should be more female faculty; the detrimental effects of an all male faculty on female students is well researched and known....

22. If I could do it again I would look more towards courses and experience that would help me now: designing training for business and industry, more management, more planning - but that is hindsight.

DISCUSSION AND CONCLUSIONS

Introduction

> "The report epitomizes the evaluation and brings into a single place, all elements that cause anxiety or power dislocations. Everyone reading the report will be assessing how its findings and recommendations affect him personally. Reports will always be interpreted in the existing political milieu. The report will necessarily (because information is power) remove power from some and extend it to others" (Guba and Lincoln, 1986, p.368-369).

With power comes responsibility. The student must identify where s/he fits in the scheme of values and experiences, and how congruent these are with the *emerging* world of educational technology practice becoming evident as this report becomes less current. An airing of the issues surrounding these choices is the initial step towards an understanding of the value systems involved: It is recommended that the Results section be read in conjunction with this final section. There, many of the categories and the criteria for their establishment are explained.

The world described by the graduates and quasi-graduates of this report is not a simple one: relationships between program experiences, educational background, valued components, occupation, salary and more minor measures cannot be established. Thus the program that has tried to remain a generalist one appears justified in continuing to do so. However, the restructuring of the educational technology program to a) reduce course load b) reduce the regular internship in the thesis option and c) introduce a non-thesis option intended to prepare the industry professional, have increased student need for support in the selection of option and concentration.

Selection for the "self-designed curriculum" has become more complex especially with the establishment of a Masters based on an extended internship. As well, the

number of courses for the degree requirements has dropped for all options from 13 to 10, meaning there is less room to manuever in the selection of electives. These changes increase the likelihood that progress through the degree will speed up, shortening the time span during which a particular course may or may not be offered. "Shopping" may increase; many courses may be registered for, few will be chosen. Enrollment in the program itself will decrease. Fewer people taking fewer courses increases the possibility that some courses will be dropped or redesigned.

The thesis and internship for the thesis option will decrease in credit value, in time required, and this may or may not effect the quality of the internship in particular. The briefer internship is intended to be an internal, faculty-supervised arrangement. If this turns out to be infeasible, external internships may be accepted; with reduced time requirements for these internships it may not be so important to get an income for the work term. A brief internship then becomes for the thesis option students an efficient opportunity to market oneself, to investigate companies of interest, and to acquire or enhance technical skills absent or weak in the program.

The non-thesis group (there are indications from the preferences of the graduate population, it may be as much as 40% of those enrolled) faces an internship of greatly magnified proportions while standards for performance in this new feature will only be emerging in any detail over the next few years. Potential difficulties with proposals to satisfy an internship component can be anticipated.

Information that relates to these issues will be discussed around each of those issues so some redundancy can be expected. First, a description of the group whose views and experiences are used is appropriate.

Educational Technologists, 1968 - 1986

This is a mature group about equally: male and female, part and full-time students, Option A and B. It is largely English speaking (76%) and just more than half (58%) are Montreal-based. The majority have finished the degree (76%) and sixty-four percent of the sample left the program since 1979.

A large percentage (85%) felt that association with the university was highly beneficial and satisfaction with the program itself was very high (76%). It is clear that the group place family relationships as the top value, and that "meaningful work" and "challenging job" are the second and third top choices. Reasons why the educational technology degree was pursued would seem to indicate a strong concern with having a new career or entering a new job market; these reasons were more frequently selected than "broadening intellectual awareness" although that also ranked in the top three. This practical orientation is confirmed by other measures that will be addressed in different contexts.

Apparently most students were clear about what career they wanted to pursue when they entered the program, and even more are clear when they leave. A much more "normal" distribution is shown on the question of how clear they were about the relationships between course options and future options: a good deal more doubt seems to surround this issue and justifies the decision-making support this study will be used to provide.

Forty-four percent have a background of some kind in education, and 19% are presently teachers or lecturers. Eighty percent of all those employed presently work full-time; twenty percent are retained on consulting contracts. Forty-three percent got their first job before leaving the program, and apparently unemployment among educational technologists is not common, though some are unemployed by choice. It appears that more than half (57%) of the population are happy with job opportunities in the educational technology field but 66% percent feel that having a good job requires being flexible about where you live.

Traditional educational institutions appear to be a big employer of educational technologists (35%), but 53% of these are teachers or lecturers in a subject matter specialty other than educational technology. Of the remaining majority, government absorbs some (10%); many are found in private industry, distributed fairly evenly in corporate training or human resources (15%) and small training consultant companies or educational materials production outfits (19%). Generally speaking it is clear that most

educational technologists from the Concordia program do not work within an "educational" environment, as most United States counterparts did less than a decade ago (Weston 1982).

Work environments are distributed normally throughout the range in terms of receptivity to change and individual success at introducing educational technology concepts and practices into the system. Most feel their employing institutions to be only moderately receptive to change, and that any rigidity is due to organizational structure (a score of 3.8 out of 4), and to a lesser extent, financial arguments (3.3 out of 4). Naturally this may be associated with the interest of practitioners in management type skills.

Eighty-three of eighty-four respondents declared an interest in networking with other alumni. Many educational technologists work in isolation from other educational technologists which would make effecting change within an organization very difficult. Forty percent have no other educational technologist in their unit or department and thirty percent have none in their company. It is not surprising that communication skills are the most highly valued of any group; they are needed to bolster persuasion tactics and bring about change in the company or unit . This is compatible with entering the management function which seems to be the route of choice for increasing decision-making power within the organization.

Those engaged in instructional design appear to be the youngest group, and for the most part, recently graduated. Career development for the majority appears to take place not by the pursuit of excellence in product or system design but rather movement from this group into middle management or project management. And this path seems to be taken relatively early.

Values: The Program

A discussion of issues in curriculum decision-making should be preceeded by a look at what value systems may be operating in the group at large.

The Degree

Eighty percent of respondents (37% definite, 44% probable) would take an educational technology degree again. Most (60 %) would take it at Concordia, while 22% would make the choice to go elsewhere. Fourteen percent of the population would have preferred to have taken another degree entirely, and an additional twenty percent would select a different university program. This means that thirty-four percent felt some dissatisfaction.

Program Emphasis

It was indicated that program emphasis is seen to be design, production and evaluation as the most frequently selected first, second and third components. Fifteen percent felt there was "no emphasis: general approach". The diversity of the curriculum is generally valued by the respondees: it was the largest category of program strengths.

Future Directions

Questioned about what direction the program should move in, over 40% did not bother to answer and 21% had only minor suggestions. This may be taken as weak feelings on the subject, or the position that opinions about this had been provided elsewhere on the questionnaire. A need was expressed for "practical" hands-on experience (16%) and management type courses (15%). This would seem to corroborate similiar results to other questions about skills. Skills are discussed in detail in a separate section.

Option Preferences

Most of the rest of this discussion of values relates concerns and viewpoints that are based somewhat on the particular program emphasis any individual chose to take, which will be refered to as the "program profile". The results section discriminates somewhat more, but essentially two profiles predominate: those who have no particular orientation (Generals, some 45%) and those focusing on audio/video-production (Producers, some 35%). Eleven percent report concentrating on computer technology; the remainder did not respond to that question.

Yet another interesting distinction lends itself to the analysis of what value systems might explain conflicting views in this population: when asked what option they would have selected if a new M.A. program permitted a non-thesis degree program, the distribution of scores was strongly bi-polar: nearly forty percent would have "very likely" taken a non-thesis option, whereas twenty-five percent report that choice "very unlikely". It seems reasonable to speculate that different perceptions of career demands may have been at the root of this configuration and other unaligned views about desirable curriculum and program strengths and weaknesses.

Perceived Strengths and Weaknesses

Because of variations in experience within the program, prior to the program and subsequently in the workplace, assessment of the strengths and weaknesses of the program are virtually a picture of one man's meat being another man's poison. The open-ended question on program strengths, when analysed, revealed "diversity of curriculum" is far and away the most valuable aspect, followed by "staff and students". Both accoladdes and complaints were in evidence in the stengths and weaknesses questions. While the multi-disciplinary nature of the program was mentioned as a plus, lack of focus and the exclusion of some areas were on the minus side; while the balance between theory and practice was applauded by some, heavy academic orientation was the thrust of some curriculum complaints.

Again differing value systems may lie at the root of these conflicting views. It may

also be that the wide choice and relative flexibility of the program act as disadvantages to those unprepared to investigate course options carefully or arrange useful internships.

"Department problems" describes the top category of greatest weakness. Meanwhile "staff and students" had a good showing in the strengths items (second on the first choice and first on the second choice). This would seem to indicate appreciation of the staff individually and collectively, but also a perception that the way the faculty works together leaves something to be desired. Comments about organization, co-ordination, standards and internal politics would seem to implicate the faculty members in these problems; another type of comment seems to suggest poor university resources lie at the root of malfunctions.

Relative Value of Program Components

It might be useful to consider how each of the program components were rated by degree of usefulness on the job. For first choice, coursework (38%) was a head and shoulders over the thesis or thesis-equivalent (21%). For second choice, the internship and thesis/equivalent ran at par (21% each), with coursework a close third. Selecting the components with the best long-term transfer told a slightly different story: thesis/equivalent (19%) and coursework (18%) were close first choice selections, with internship indicated as a marginally popular front runner in the second choice item. While the reasons for valuing the thesis were fairly homogenous (problem-solving skill development and transferability to many environments), the reasons for valuing coursework usually indicated a focus on particular courses. The internship is credited with facilitating the essential transfer of skills to the workplace; otherwise it does not appear to have been a very popular experience.

There is an indication that many would change their emphasis in the program (37%), if only slightly; two-thirds of these would select different courses. It is believed that these values are fairly measured (for transferability and usefulness) and are not being judged on other grounds. For example, the thesis component and the coursework were both cited as major reasons why the degree took longer than expected for 40% of the group, yet they are still valued highly. Again we can assume about the preferences

discussed, and this may apply particularly to coursework, that some of these various values relate directly to the 'value context' provided by an occupation. Certainly an analysis of sixty job skills rated for importance would indicate that in different occupations different skills are valued.

Skills Valued in the Occupations

Those who report having had much input to their job definition are significantly related (.001) to those who report greatest success at introducing educational technology practices to the workplace. This is not puzzling but no relationship could be established between either of these measures and occupation or type of organization.

Instructional Designers

It would appear that in the eyes of most graduates much of the program curriculum is directed towards instructional design and educational materials production. Instructional designers operate principally in the private domain and all of the fourteen instructional designers complained of insufficient preparation for and association with industrial settings; cited were inadequacy of instructional design skills and computer and video courses, lack of project management courses, overvaluing of thesis and obscurity of the degree in the business world. These examples were taken from responses to open-ended questions throughout the questionnaire.

The curriculum changes for 1988 have been made available as this report is produced: core curriculum resources are being devoted to instructional design, and these courses are now compulsory. This better reflects the needs of the market.

Training Project Managers/Consultants

They are the largest occupational group and they perceive their highly valued evaluation and design skills are offered within the program. Problem identification skills for the organization (rather than for the instructional system) are needed by this group but according to the whole sample the program seems to provide more of the latter than

the former (skills 5-7). Crucial financial skills required by this group are offered only in Administration of Educational Technology Units for Education and Training (701); scheduling and planning tools are offered in Concept of Educational Planning (651) and Educational Planning: A Comparative Perspective (652). Analysis tools are offered in Educational Systems Analysis (653) and Educational Cybernetics (606).

Speculation is that the managerial type objectives of these courses may not be covering the skills in sufficient depth or that the focus of the course is not useful for the new practitioner. Project management would be a much more appropriate focus for planning, scheduling and budgeting skills than the "administration of educational technology units". Unfortunately Educational Cybernetics acts primarily as an introduction to the whole concept of cybernetics; it might usefully be split up to provide some more concentrated approaches to management and problem identification; these areas both appear to need more resources. These are topics in which graduates feel weak, and that they need to advance in their organization. If in the future these crucial areas are not expanded and/or organized more efficiently, students would be advised to make the most of these course offerings by choosing very practical and preferably "real world" projects; this is often not only permitted but encouraged.

Human Resource Managers

Human Resources Development is dealt with in the Educational Technology program largely at the doctoral level. Those who have entered this field with a Master's degree probably did so via the training and evaluation functions, thus its suspected the importance of evaluation for career advancement becomes buried because it no longer shows up here in the realm of practice. This is speculation; career paths were not probed so this cannot be confirmed.

Educational Planners/Administrators

The category is generally comprised of department heads in their own specialty or the heads of an educational technology services unit. Many of these (63%) were employed in the public education sector (university or higher education) prior to their

educational technology degree completion. They are the one group that obviously prefers the thesis over a non-thesis option. The few that didn't were administering educational programs in the private sector, and they valued communication and marketing skills.

Values: The Eight Groups of Skills and Their Relationship to Occupational Types

All scores reported in this section are means of medians, derived from a possible score of 4.

Skill groups are discussed in terms of their importance ranking (to the current job), the ranking of their program emphasis (graduates' views of program resource allocation to that skill group), and perceived source of those skills (pre-program, program or job).

Communication Skills

Communication skills, which involved both interpersonal and written communication, were at the top of the importance rating for practitioners, and at the bottom for percieved program emphasis. This concurs with Weston's (1982) findings for instructional developers. Viewed through occupational sets, its importance varies somewhat. It ranks fifth with teachers and instructional designers, but with a reasonably high score 2.8 (out of four) for importance. For training project managers/consultants, human resources managers and educational planners/administrators it ranks either first or second with scores ranging from 2.9 to 3.4. The perceived importance of communication skills to the job increases as job responsibility and rank increases; in this respect this skill group resembles management skills. The most dramatic increase is for middle management and consultants (Training Project Managers/Consultants) but communications are also valued in executive level management. Communication skills were listed as a major area of skill weakness for practioners in general, and they rivaled management skills as "skills needed for advancement". Most communications skills, it appears, are acquired on-the-job or before the program.

Students should be aware that advancement within the organization, and particularly success as a freelance consultant will very much depend on communication

skills of all kinds. From clarifying what is required to persons being supervised, to expression of ideas in instructional materials, to the persuasion of superiors regarding the adoption of innovations, written and verbal facility is pivotal.

Evaluation skills

Evaluation skills are a close second in the global rankings. After a subgroup believing the program has a general emphasis was removed from the analysis, the importance of evaluation to practioners matches the ranking of perceived program resources for this area. Unlike communications skills, evaluation skills decrease in importance as responsibility increases. For teachers and instructional designers, they rank first or second with scores ranging from 2.9 to 3.6 respectively. For training project managers evaluation skills drop to fourth place but show a high importance score of 3.1. For human resource managers and educational planners/administrators the group drops to fifth or sixth place with scores of 2.2 or less. It would be prudent to recall that while these latter occupations may not currently practice evaluation skills, the likelihood of rising to positions in human resource management or educational planning without having practiced evaluation must be small. Those who rate evaluation skills highly feel that they received them largely within the educational technology program.

Problem Identification Skills

This is the third highest category of skills with a score of 3.3. As a skill group it shows a consistantly high score in all occupations. Like management and communications skills it is one of the top skills areas in each management level occupation.

The peculiar characteristic of Problem Identification skills (PI) is the division of perceptions about the origins of these skills; roughly half credit the program, half the job site. It may be that courses emphasizing the "big picture" such as needs analysis or educational systems analysis were not given much attention in the curriculum prior to 1980, therefore some people got the skills here, others didn't. However, only 14% of the respondents graduated before 1979 when the program began to move in this

direction, so this cannot account for all of the variation.

Unlike evaluation skills , they seem to increase in importance as responsibility and rank are gained. Generally speaking, evaluation skills appear more "homogenous" because they are all integrated within a more singular occupational function whereas the problem identification category may be made up of skills that are each performed in different occupational functions. A closer look at PI skills could be useful.

Some PI skills have been subsumed in courses not devoted specifically to problem identification, such as instructional design or evaluation courses, Quantitative Methods, Learning Theories, Cybernetics or Educational Planning; perhaps this is perceived by only some of the respondents. As well, some PI skills are used within the instructional design (ID) function , others in the organizational development function etc. and the tools are different. Depending on what role an individual plays in the organization, any skills may be perceived as being acquired in the program or not. Instructional design front-end skills are used and recognized as ID skills for example, and consequently perceived by most as being available within the program. On the other hand, something like cybernetic modeling is perceived by some people as an appropriate tool for management ; others may not see that and use tools acquired on the job for those analyses. All scores on PI skills ranged smoothly between 3.3 and 3.6 with the exception of "use cybernetic tools to analyse an existing or proposed system" which rates only a 2.2. This is the skill description that specifies design of a system as opposed to a product (see also Design skill #9). Note that the related"Specify product/system standards, goals" received a higher (3.6) score. I suspect this is due to the limited analysis of system goals rather than system functions. This should be an indication that very few people are given the mandate (time and resources) to do a cybernetic model of an entire system as part of their job; only 33 percent think the skill is quite or very important. The hypothesis was that these people were very high level practitioners, but further analysis showed that this group consisted of 31% of teachers, 15% of instructional designers, 32% of training project managers/consultants, 29% of human resource managers and 25% of educational planners and administrators.

Anything to do with cybernetic analysis, task /content or learning environment

analysis is perceived as being learned in the program. Most people feel they have learned needs analysis, system goal or standard setting on the job. I believe that had the skills been worded "Analyse a product/system *cybernetically* " or "evaluate a system or product according to *cybernetic principles* " the skills would have shown a much higher incidence of use or importance. In an early version of the instrument this type of activity description was used, but the specific term "modeling" was requested, and accepted as a revision.

On the whole front end skills would seem to have a higher value than program emphasis would indicate. They seem uniformly required by almost every job category and particularly important in upper level positions; frequently they appear as skills that practitioners feel weak in (cited by 19.7%), and as skills needed for advancement (cited by 17.9%). Problem identification skills are discussed in this light in the section on Issues: Course Selection.

Design Skills

Design skills are a very close fourth in global ratings of importance to practitioners. By contrast it is number one choice for program emphasis. Much of the perceived program emphasis on design may also be due to much design skill development being conducted through production courses. Design skills rank within the top skill areas deemed important for all practioners with the exception of Educational Planners/ Administrators. Occupational groups that value the skill highly show scores ranging from 2.9 (teachers) to 3.4 (instructional designers). This would seem to justify its perceived emphasis within the program. Although instructional design was not a compulsory core course most students take it. Given the entry pattern into the world of educational technology careers it would be appropriate for instructional design to be a required course, and it has been made compulsory in the new program.

Design skills listed also have a kind of topology it may be worthwhile to examine. Front-end design skills are rated highly if they are not associated with cybernetics; in the instructional design context people just don't view cybernetics as offering a "tool". The importance rating of all other skills are high and even carry over from the lower level

design skills into the upper level production skills.

Teachers, Instructional Designers and Training Project Managers/Consultants report they have developed design skills largely in the program; curiously instructional designers report this less frequently but then design is their specialty and it is likely much was picked up on the job and through on-going professional development.

Management Skills

Management skills are fifth in global importance and program emphasis also shows a very low rank. It's importance varies predictably along occupational lines rising in importance with responsibility and rank. Rated low by teachers and instructional designers, its importance increases for Training Project Managers/Consultants, moving to fifth place with a high score of 3.063. It is the number one important skill area for Human Resource Managers and Educational Systems Administrators/Planners. Generally, the more important a particular management skill was, the more likely it was perceived to be acquired on-the-job.

Its poor showing on "importance to current job" for people like instructional designers should be contrasted with two other measures: the strong interest in management skills shown in the open-ended skill questions concerning skill weakness and skills needed for advancement.

Management skills got a great unsolicited vote of support from a very broad segment of the respondents. These and related entrepreneurial skills were mentioned by over 22% as being the top area of weakness in their job performance, and by 21% as being the skills most needed for advancement. Those that feel they have some management skills overwhelmingly credit the job environment for having developed them. Clearly the need for management skills increases as careers develop. Eighteen percent of respondents, when asked what direction the program should be moving in, responded that management skills were required.

The question is what is the relationship of management skills to the practice of

educational technology within the organization. They were mentioned in the same breath, if you like, as problem identification skills and communication skills as "most needed for advancement ". Clearly management skills have to do with career aspirations more than current function for most practitioners, but as such it is universally an important group of skills. It would be useful to consider the three groups together, which is done in the section on Issues: Course Selection.

Professional Development

Professional development scores are healthy in all categories with scores ranging from 3.0 and 3.1 for teachers and instructional designers respectively. Importance then declines just slightly, ranging from 2.9 to 2.5 for the middle and upper management groups.

Resources and Services

Resources and Services has a poor showing as a set of skills from "determining service priorities for a production unit or resource centre" down to "performing a repair". Viewed by occupations, scores ranged from 2.2 (Educational Planners/Administrators) to 1.5 ((Teachers). The exception was "assist clients in the use of the services" (2.8) which was rated highly by members of each occupational group; more than 50% of instructional designers and educational planners/ administrators valued it, and a quarter to a third of members of remaining job categories. However, the skill set as a whole, as a sort of hardware/software resource management area , does not seem to be a common educational technology area of practice.

Production

Production skills are rated lowest in importance to practitioners, rating a global score of less than 2.

Graduates felt production to have a strong emphasis within the program although any hands-on skills are not commonly used in most educational technology jobs as we

now know them to be.

"Direct production of materials, review quality" has a rating comparable to design skills: while every other production skill shows a neglible score, its rating was twice that of any production skill. This leads me to believe it is a complete abberation in the production capacity, incongruous with that set, and belongs in the design category as a level of implementation of the design that involves evaluation rather than hands-on production skills. (It was cited as very important to most instructional designers for example.) This would plunge the production skill set to an even lower importance rating.

The remaining skills are rated as very important to some individuals and it is useful to report the conditions or occupations where this is so. About one-third of teachers and instructional designers perform some production skills regulary. The remainders are those who work as consultants (especially outside North America), run a virtually one-person department or are self-employed in their own small company: these are situations where the broadest variety of skills are called for. Some training project managers cited some 'upper level' production skills as important - those involving directing or reviewing productions rather than hands-on technical activities.

Relationships

The survey shows that students were not as clear on how course options related to future options as they were about what they wanted to do when they left the program. More guidance was called for both in the program and through the transition to the job market. As well, open-ended question responses refered to the need for stronger counselling of students. How course options relate to future options is one area which will be addressed by the guidance document produced from the results of this study. A matrix of topics, courses and occupational functions would probably be useful to new Master's candidates.

Issues

Thesis or Non-thesis Option

Thesis and thesis/equivalent

Almost 40% say the program took longer than expected with the demands of the thesis component and the need to work being the chief causes offered. The thesis is the one program component that seems to hold people up (often indefinitely) from completing their degree, yet degree completion was viewed as highly desirable for both career, job and personal reasons. Seventy-six percent of those who responded have completed and 19% still intend to do their thesis. Belief that finishing the degree would offer advantages like career advancement and increased salary were overwhelmingly evident, however, it is reasonable to surmise that this relates to thesis completion only in so far as thesis completion is invariably involved. If a non-thesis option is perceived as a swifter route to a completed degree it may become the more popular choice. The thesis completion time varies tremendously but this relates predictably with full or part-time status.

When asked if they would select a new non-thesis option with a report relating theory to practice in the workplace the results were strongly bi-polar. Almost 40% said they would do a non-thesis option. Is this due to models for the thesis component being too rigid? Are the others the "practical" types, the people calling for stronger links to business, more hands-on experience, management skills? Evidently some people did not find the thesis component too rigid a model: it's application to real world practice was attributed to it's depth and comprehensiveness as a learning and problem-solving experience. As for those who practice in industrial and business settings (instructional designers and training project managers/consultants) neither were inclined significantly to the new non-thesis option.

The question remains as to who are the two distinct populations: those that value the traditional thesis or thesis equivalent and those that don't. No relationship could be found between thesis option or non-thesis option types and other relevant descriptions:

age, professional background, occupation, option A or B and the time of association with the program seemed to have no connection to subsequent preference for a thesis or non-thesis option.

It can only be concluded that the experiences of individuals within the program vary considerably as do their expectations, indicating two critical responsibilities for the faculty and student body: students should be assertive about adequate counseling being provided; and the master's degree must necessarily retain a general focus. Interestingly, two-thirds of the people report that they were clear on what future they wanted when they entered the program and 85% were clear when they left; but a normal disribution is shown when asked how good an idea they had of how course options related to future options. More formal guidance through the program was called for by 70% of the respondants. A more active role for the educational technology faculty in initiating graduates into "the market" was called for by 60% of the respondents. All these observations would support the idea of guidance for career-related decision-making.

Internships

Experiences with internships obviously has some bearing on the selection of the new or traditional options. The new non-thesis option requires an extended internship with report. Of the past internships reported, instructional design and production was the most common single activity (50 % of cases). Nineteen percent were done within the program itself and twenty-three percent in some kind of public educational setting. Over 50% were salaried and almost 50% were designed by the student. Fifteen percent report getting their first job directly through their internship. The internship does not stand out as a useful program experience; only 9.5 percent selected it as a first choice, and it is still behind thesis and coursework as a second choice. This is peculiar since additional practical hands-on experience is cited by graduates as something the program could use. Very few selected the internship first as the component with the best long-term transfer (6%) although it was a high second choice (10% as compared to 6% for thesis and coursework) for those who bothered to answer the question. The reasons given for its long term transfer qualities were that the experience transfered easily to the workplace, provided an opportunity to put theories to practice and was important to job change

success. These are all evidence of "transfer" but none seem to be particulary associated with the qualification "long-term". Also the program weakness summarized as "professional links" was the second largest category of complaint. The internship component, it might be concluded, is not taking up this slack in the special preparation for industrial settings. Whether then the Master's with extended internship would be preferable to additional coursework is an area of doubt.

A student selecting the new option is advised to be assertive about arranging an internship that will be a rich learning experience, and making sure that the concept for the internship, its supervision and the type of report help him or her optimize the experience. Group projects and collaborations with industry were also mentioned as experiences that would be worthwhile to Master's candidates.

Course Selection

Production Courses.

Production courses bear special discussion because of their perceived high profile in the program and low importance in occupations. There are several arguments for taking production courses which bear discussion. The questions seem to raise themselves here whether the heavy resources allocation to production skills are justified and whether resources allocated to the development of production skills are used optimally. The arguments for the high proportion of production courses in the program have been in the order of 1) it is in production that a high number of graduates will get their foot in the door of companies or educational institutions, 2) students should develop some aesthetic values for AV product design and evaluation, 3) in order to direct the production of anything or evaluate it, pratitioners need to have some idea of what is going on in these processes, and 4) production/evaluation thesis-equivalent students need it. I will deal with each of these in turn.

Of the respondents, a good number (31 of the 84 respondents) "stopped close association with the program" (entered the workforce) around 1985 or after. If they were

hired for their production skills, this is not showing in the job descriptions. It is true that production courses used to enjoy an immediate total capacity enrollment five years ago, but that popularity is, for now at least, waning. Video disc production on the other hand seems to be attracting interest to the extent that a study group formed to explore the area before credits or facillities were available in the program. Both some video production and computer courses would be useful to those planning to move into this area.

Sensibilities required for good production values can be nurtured without actual involvement in studio or location production however. Video producers from the program are in the minority to say the least, although it is true that the technical and particular language of the visual arts is important even for scripting. However, a good film or video editing course could provide this nomenclature as well as visual aesthetics, overall organization of visual and verbal content and an awareness of structure and continuity constraints. Various types of instructional film appreciation or evaluation courses could deal with evaluation and other particular issues in the audio visual media. So where professors are flexible students might be well advised to have their own projects accepted. Otherwise students are advised to consider their future plans and options before taking more than a couple of electives in the production realm.

Not being able to direct unless you have done it yourself first seems to be a sound and practical argument. However, let the record show that positions of this sort (directing others in the use of audio-visual production facillities) usually involve a large outfit, with unionized technicians. Bone fide film or video directors usually have more expertise technically than this program offers. Those who do hold these positions from this program appear to have graduated some ten years ago or more; they often have a radio or television background, and they of course have moved up beyond the practice of production. It would seem communications skills are almost as useful, if not more useful, in situations where the technical work of others must be directed and evaluated. Design is strongly linked to production in practice but it should be noted that design skills fall as communications skills increase in importance - once again, as practitioners assume more responsibility for the bigger picture.

Clearly some people show a strong interest in production for a specific media and these courses are therefore indispensible: however these people should be aware that if they are more strongly attracted to the medium for its own sake than to the practice of educational technology for its own sake, jobs in which hands-on technical competence are required have not been abundant. The noted exception might be overseas appointments where jack-of-all-trades jobs might reasonably be expected to be more common, and technical expertise more scarce. Students not preparing specifically for a career in audio visual production, radio or television should take only the number of courses that give them a general understanding of the area or that are required to produce the products they will evaluate. Under Values: Production Skills the types of practitioners who value these skills have been discussed.

In short, a heavy concentration in production skills, unless you have something very specific in mind, will not prepare you for the majority of educational technology jobs recently becoming available. While some media experience must be crucial to getting many instructional design jobs, other more general skills very quickly become more important. For the non-thesis student the internship might well be spent acquiring specific media skills of interest in the appropriate external setting; in fact if enrollment in these production courses continues to decline, it will be necessary.

Implications for computer courses

The above notwithstanding, there may be similiar implications for software development. Knowledge engineering was listed among communication skills and received a high score (3.409); it was a mistake that programming tasks did not appear in the production list. However, it is a reasonable analogy that programming language acquisition is about the same order of skill that a production course offers, with the added disadvantage that the world of computer software development dependant on knowledge of programming languages and hardware constraints requires constant update.

Like video production, it is arguable that an understanding of the nature and limits

of the medium are important to any educational technologist, and that in a very small organization production (programming) skills might actually be used. It is also likely that "advancement" within a larger organization would certainly involve evaluation of these products more than production of them; even "design" jobs emphasize evaluation skills. What instructional designers contribute to product development is evidently not production skills. A honing of skills in software system design, the ability to program larger systems, would most certainly involve further education in computer science.

Currently only 14% of the 84 respondents report working for software developers or *exclusively* in computer related work but it seems likely that this proportion would increase rather than decline so the general theory of information systems characteristics and exposure to information processing hardware specific technology will always be required. Developing programming skills (beyond an appreciation of the problems involved in the activity) would seem to have limited use for the reasons already stated. I believe from my own experience and the experiences of those I keep in touch with in this line of work that it is a false assumption that practitioners are expected to get down to the writing of code. Educational technologists can probably design more complex programs than they are capable of implementing.

Since software design is a team effort communication skills are probably more important to the ID practitioner than computer science knowledge. Although programming and software design skills may arguably be beyond "training" the program can't be expected to provide them to the extent that people become either experts or specialists in a craft. On the other hand an area like knowledge engineering (importance score 3.4) as a *communication* skill probably deserves a place in the curriculum; in fact it may be the only communication skill that could justifiably be offered within the educational technology program as a specific course, or in combination with instructional analysis as a front end ID skill. Concepts and nomenclature for practitioners to express at a higher level what is desirable in a product, to question and communicate with those qualified to handle the system "interior" are basic requirements for the software industry practitioner.

Some experience that illustrates to the budding software designer that every design

has "costs" (in memory space, in development time etc.) would be useful in a software development course, where the student can use evaluation practice relevant to compromising on a design that satisfies the important instructional or information goals. Students should also press for prototyping tools, authoring tools, systems for interface development and hypertext systems to be made available in the program. Instructional design for existing shells would provide basic experience in knowledge engineering.

Skills for strengthening and skills for advancement

Management, communication and front end analysis skills have several things in common. They are all cited as the types of skills needed for advancement, and the skills people feel most weak in.

One respondent complained specifically that there was little attempt in the program to link the results of educational technology interventions to the bottom line of an organization. Linking 'ed tech' interventions would not be a concern if practitioners were generally happy with the systems and products they are being asked to design or administer. Its clear that graduates are thinking systemically and are resisting the confinement of educational technology to instructional solutions. Many want to contribute pre and extra-instructional interventions to organizations rather than implement an instructional solution for what might not be an instructional problem. Other tools are needed for this: management skills to get them where they will effect decision-making or have the ear of those who do; front end analysis to support arguments for new kinds of interventions; and communications skills to persuade and motivate those sanctioning and those implementing new interventions.

It would seem that the urge of ID practioners is eventually to move out from an unsatisfactory situation. Several reasons for this could be considered: instructional designers do not wish to carry out the (presumably) less enlightened "solutions" of others in the workplace, and therefore wish to enter management to advance the acceptance of new solutions; instructional designers find they do not have (perhaps due to lack of technical expertise or organizational blindness to their entire field of

functioning) enough control of material or systems development (such as in software) to strive for excellence in the instructional design area; instructional designers, like anyone else, will tend to want to climb in their organization which involves moving into management; or it may be a combination of all these reasons.

Since a vast majority work in the private sector, either in corporate training departments (read: large, consequently somewhat inflexible) or small private materials producers (read: survival-oriented, client-pleasing and rigid in other ways), effecting the decision-making regarding the big picture is a case of getting outside the designer/producer role.

The role of manager requires management skills; the role of manager carries with it the responsibility for determining solutions or at least greater access to those who do. Such solutions in the training area might involve job re-design, job aids or decision-making support systems instead of training. Members of one corporate training department now headed by an alumnus of this program refer to themselves as the "training avoidance department". In the mass market or private production sector educational technology practice might involve determining product concept , monitoring opportunities to initiate projects or contributing to marketing strategy. Some people view the transition to these areas of practice as requiring instruction in needs analysis, organizational design and interpersonal skills; this is the strongest indication that graduates think systemically, proactively. Others view control of the purse strings as a route, which might be considered more reactive but not necessarily contrary to the first group.

Moving into a management position seems to be more popular than negotiating for educational technology interventions regardless of rank or power; since most educational technologists work alone, professional "authority" alone appears to be insufficient. Financial acumen, perhaps more so than front end analysis, is associated with promotion, responsibility and control. Honing up communications and front end skills to campaign for an unstandard intervention might be done from within a managemnt position or not ; presumably many feel the formal control is desirable. Cybernetics does not appear to be perceived as an analysis tool to bolster management

functions although people appear to be thinking systemically. What people seem to think will get them to the bottom line concern of the organization are needs analysis type techniques or financial arguments. This can only be seen as somewhat unfortunate if the act of minding the system in this way leaves less time to function as a proponent of educational technology. That aside, certainly planning, scheduling, cost-effectiveness type analyses and many other system planning tools are being demanded by those intending to function as other than teachers and instructional designers. The program has added courses dealing with some of these topics, although financial analysis tools do not appear to get much attention.

Communications skills would serve all groups well but particulary it seems, middle and upper management functionaries in all areas. Written and oral communication is subsumed in the curriculum it could be argued; nevertheless preparation seems inadequate as discussed in the Values section of this chapter. Skills described as negotiation, diplomacy, networking, public speaking, human relations etc. were mentioned by almost 30% of the population as being crucial to their advancement. They would certainly supplement both the management type and the consultant. It is not the mandate of the program to deal primarily with changes to individual disposition or personal presentation, however understanding the motivations of groups within the system, the bases for policy and the effect/power of information within the system are cybernetic problems. Cybernetic analysis and holistic views in general essentially *ground* the student and arguably increase not only problem-solving abilities, but *confidence* in his/her problem-solving abilities. In short, perhaps the best the program has to offer with regard to communications skills is fortification of this confidence.

Graduates take these gaps in their professional preparation seriously: about 54% of those surveyed are seeking to acquire the skills they need either formally (23.8%) or informally (29.8%). Business Administration courses are popular with those identifying themselves as back-in-school; communications skills and needs analysis are being picked up informally: by personal initiative, networking and through special interest groups.

The program does not and cannot offer thorough preparation in specific fields

such as software development and various audio visual media. It is clear that the average educational technologist is a team member in these and other ventures and that s/he may be operating alone (professionally speaking). Students should be aware that the degree that educational technology interventions will be accepted will depend quite heavily on their ability to clarify, negotiate, persuade and exercise diplomacy. Management, analysis tools and understanding the motives of others also seem to be critical for thriving in the organization.

Relating Courses Offered to Occupational Areas

Respondents expressed doubt about the clarity of the relationships of course options to future options. The following relates courses presently offered in the program to occupational areas. It is evident that the bulk of program concentration goes to preparing graduates for entry level (instructional design) positions.

In the following lists, courses have been associated with occupational areas. Core courses are also included but it is assumed that Philosophical Aspects of Educational Technology (607) and Educational Cybernetics (606) are globally essential. For the guidance or orientation document to follow this study, these associations should be updated and/or included in a matrix with desired skills for occupations.

Please check current course titles for correspondence to this list: course titles tend to change over the years.

Instructional Design and Evaluation.654 Instructional Design, 631 Curriculum Development Theory and Practice, 613 Learning and Instructional Theories, 635 Principles of Educational Message Design, 611 Psychological Foundations of Educational Technology, 673 Selected Topics for Adult Learners, 621 Media and the Young Child, 624 The Moving Image, 682-684 Studio and Small Format Television Courses, 685 Audio Production and Evaluation Lab, 623 Planning and Producing Audio Visual Materials, 681 Research and Writing for AV and Computer Media, 660 Introduction to Educational Computing, 664 Computer-Assisted Instruction, 663 Small Computer Systems for Teachers and Trainers, 637 Educational Simulation and Gaming,

665 Modeling and Simulation for Intelligent Tutoring Systems, 695 Topics in Instructional Informatics, 643 Measurement and Evaluation in Education, 642 Research and Evaluation in Education, 636 Formative Evaluation of Educational Materials.

Training Project Management, Consulting. 593 Management of Learning Resources, 653 Educational Systems Analysis, 701 Administration of Educational Technology Units for Education and Training, 655 Educational Technology in Developing Nations, 702 Development and Organization of Distance Education.

Human Resources Development. 602 Educational Technology and Society, 614 and 615 Human Communications.

Educational Planners/Administrators. 651 Concept of Educational Planning, 652 Educational Planning: A Comparative Perspective.

General Conclusions

Concern has been expressed about the absorption of the educational technology profession, its parasitic relations to other fields, compromised integrity and loss of identity (Beckwith, 1988). Industry and the military train; products are developed and marketed: everywhere educational technologists appear to be in the service of enterprises that do not have the liberation of the human spirit, or even education of the individual, as a goal. For many educational technologists "advancement" means not an increase in excellence at instructional product or system design, but a move into management, adminstration or related fields (such as human resources development) for reasons previously discussed. The systems or cybernetic approach which unites all forms of educational technology practice is condusive to a 'generalist' professional preparation; this must in fact catalyse any 'absorption' phenomenon among the Concordia program graduates. Yet the multi-disciplinary aspect of the program design is viewed as its greatest strength by a good proportion of the alumni.

It would seem that equipping people with the entrepreneurial skills to become and

remain consultants might be the best hope to prevent 'absorption' by organizations or other professions, encourage excellence and increase earning potential and prestige. However, much of consulting expertise must be honed on the job and this would be the case even if the curriculum adjusted to these needs. Minimally, educational technologists should not have to use indiscriminately the financial and analysis techniques of other professions, which by their nature are incompatible with educational technology aims.

Another concern regarding the 'generalist' model for the Concordia program is that students appear to be divided as to whether a "practical" preparation is more valuable that a somewhat more "academic" one. Courses which essentially provide training in a medium, and which could be described as 'undergraduate' level courses appear to be valued as a means for getting a job. Without these very particular skills, it is implied that graduates lack the confidence to fill certain organizational positions, or employers expect this, despite the fact production or media-specific skills are rarely used. Whether the program can continue to offer and fill studio production courses may make unnecessary the question of whether they should. Now that an extended internship is required for those who desire particular forms of training, perhaps individuals should use this term to its best advantage by getting state-of-the-art experience in an organization that will accept them as an intern. The question of financial remuneration might have to be secondary to acquiring the practical experience one wants. As the internship was not especially well valued for the past graduates, if a wholly satisfactory internship could not be arranged, results show coursework would be a more popular option for the student. Perhaps current students should make a case to the faculty that the new program should allow this replacement.

Students should also be aware that if the inauguration of the new program does not allow course substitution for internship, it is likely that some courses will become relatively unpopular and be dropped. A low enrollment for some types of courses as opposed to others will either change the nature of the course or may result in some being dropped altogether. This may alter the overall nature of the program and its graduates. The experiences of graduates, students own aspirations and trends in the field itself should be kept in mind when electives are selected. Vote by registration means this is a time of relatively greater power for the student body.

RECOMMENDATIONS

The advice to students in the restructured educational technology Masters program is basically to select courses and options with the utmost care. Student representations to the faculty could justifiably include a demand for greater faculty involvement in program guidance, in the establishment of better links with industry, and the transformation of common financial and management tools for furthering educational technology goals, particularly in non-educational settings.

Elective Selection

With fewer courses, and proportionately fewer electives necessary, students should avoid courses of the type that conceivably could be or actually are, offered in undergraduate programs in other disciplines. Intelligence on courses should be assembled from all available sources to determine whether the content is something one could pick up with exposure to the right resources (a camera, a personal computer) and merely "flavored" with instructional or systems orientations. It is hard to make an arguement that such courses would be worthwhile graduate school experiences at least at the full course level. Short seminars (two days to a week) in production-related topics should be recommended to the faculty and could be function as one credit courses. Seminars of this type could also be used for "updating" the population of graduates.

A small proportion of practitioners still value some production skills very highly; the majority of these are teachers or consulting instructional designers. Again for those who wish grounding in a specific media, a properly planned internship could also provide exposure to state-of-the-art conditions. All generalist skills are highly valued in the (over fifty percent) of middle and upper level management positions.

For those who aren't very clear about exactly what they want to do careerwise, and are unprepared to do more than the minimum requirement of courses, getting an idea of what might be of special interest will be difficult. The production of "generalists" (as the term is used in respondent's program profiles) might eventually overshadow the specialty areas. Production course descriptions are abundant but enrollment declines as

does the demand for these skills; acting so as to increase one's options in the job market will demand more diversification and this means the development of skills that will transfer to many environments.

Curriculum Gaps

For the production of generalists however, two areas of the program remain weak: financial management and communication skills.

These skills are cited specifically or implicated within an early design paper for the program (Boyd, 1969) under a suggested module for developing "the ability to gain and maintain power". It seems educational technologists have the entry level skills for the profession as instructional designers and frequently project managers, but are quickly moved to compensate for their lack of impact in the organization by professional development in "non-educational technology" areas such as business administration. Front end analysis skills, organizational development and skills in cost-benefit analysis have all been called for; as suggested by one respondent, "courses that link educational technology interventions to the bottom line of the organization" are required, and students have every indication from this study that representations could be made for their inclusion in the curriculum. The inclusion of cost-effectiveness analysis and financially-related management tools are important, as it seems that graduates eventually make attempts to pick them up in MBA type programs. These tools have the nature of their value systems in their design and arguably tend to corrupt the purposes of educational technology practitioners. If the program could offer tools fashioned after our own professional purposes it would help educational technologists resist the absorption into other fields. Students should press for their inclusion in the curriculum.

Resources devoted to a broader concept of evaluation might correct what must be described as a dearth of courses catering to the needs of middle managers. Program and system evaluation are two areas of analysis where this large occupational group could benefit . If this situation is not corrected formally in the curriculum, courses in materials evaluation should be used to work on projects of a broader nature. This will depend on the flexibility of the professor.

Communication skills are frequently mentioned as desirable skills but it is debatable whether the program should "select" for these, or attempt to include them in an already streamlined curriculum. Of particular interest is the policy of the (new) program to prepare knowledge engineers. Students should seek clarification of where these skills are offered; about half of those who practice this claimed to have learned it outside the program.

Group Projects

Twenty percent of the respondents believe the practical aspects of the program to be one of its strengths. The weakness of project management skills and the program's professional links would indicate that group projects should be organized to overcome both these perceived gaps. Projects of this type were also specified in the early conceptions of the program (Boyd, 1969). With the advent of the new option, faculty involvement in this area may increase. Internships of both the short or long variety may be carried out within the department.

Perhaps *group* internships could be proposed by students to outside agencies and the contact-making and proposal-writing activities could be initiated and supported by faculty. Projects with outside organizations might begin at a needs analysis level, possibly unfunded and/or dealt with as a class final project. The report or proposal would theoretically result in funding of the required system or materials design, production, implementation, evaluation, revision etc.

Options

It seems unlikely that non-thesis option students will be accepted into the doctoral program without course "make up" work while few reasons seem apparent that other option students could not continue to find work in the industrial field. For those not stimulated by the thought of doing either a thesis or thesis-equivalent the new option would seem a good choice if the discussion of internships in the last section is heeded: that in order to be useful these work terms should be carefully arranged with student

goals in mind. The shortening of the association period with the university, especially for those mature students with financial obligations, might also seem like a good basis to select this option. On the other hand the thesis and thesis equivalent was the overall prefered experience for many students (36%) , and this without apparent relationship to occupational type. The non-thesis option would not guarentee faster advancement in industry; it may arguably make no difference or even hamper it; but it may ensure an earlier, perhaps longer, guided exposure to the "real world". Again, the value of an internship may increasingly lie in providing deeper experience in production for a certain medium.

Guidance

Program guidance and and the assumption of responsibility by the students for their own career development are both needed if the degree program is to be a satisfactory experience. A stronger orientation to the field of educational technology in general and the program in particular is a cause students should advocate. The program can certainly plan such an orientation, and the packaging of these findings into an orientation document for new students is the first step. There is little indication that faculty inaccessibility was a common problem, and students must formulate their concerns for discussion with their advisors.

Networking

It was suggested by several respondents that the kind of guidance students get from each other is very useful. There is every indication that graduates wish to network with each other and no indication that current students would not be welcome in this network and be able to benefit from it. With no professional association to fund and manage the activity the likelihood of such a network developing would seem slight, although respondents indicated the willingness to pay a small fee for something as simple as a directory of names and current interests. A lively professional organization would appear to be a welcome prospect, especially to the many educational technologists who work without other educational technologists; it may help combat the 'absorption' of the profession.

A network needs manpower and funding; the faculty might consider an introductory undergraduate educational technology course: a mutually beneficial relationship between faculty and a professional association could be worked out. Given the survey results, the faculty would be justified in adding a course to the number of courses required for the degree and this might be possible at an undergraduate level. This introduction would need to be kept current and a professional association could provide a source of information, contacts and guest speakers in particular areas of interest. Both efforts would help remedy the lack of guidance and fraternity that has been felt by program graduates.

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List of Appendices

Appendix A - Covering Letter for the Pre-Survey Participant

March 1987

Dear

Attached you will find a questionnaire which is designed to evaluate the OUTCOMES of the M.A.(Educational Technology) degree program at Concordia University. We are attempting an assessment of the degree in terms of professional preparation (among other important criteria). **The result will be a detailed account of the current activities of the "alumni", and meaningful summaries of this information will be sent to participants in this survey.**
It is not like other surveys. This study will be the very first formal study of outcomes with an eye to directing student curriculum decision-making. We are attempting to come as close to a census as possible. Your experience is important, and **the data can be somewhat private if you wish.** The parts of this package can be returned in separate envelopes (and at different times if you wish) so that the data cannot be linked to you. The specific information is in any case confidential.

The information sheet provided will complete a centralized "alumni" file.
The file will give fellow students or the department (and even prospective head-hunters) a system through which to contact you, and you them. The specific uses of the network will be determined by the results of the study.

You are a special participant. As part of the pre-survey Group of Eight, I will be asking you to suggest modifications to the questionnaire, the letter and attachments. The instructions will indicate at what point you should call me for the phone interview. After the phone interview you should return the (1) questionnaire and comments booklet, and (2) the info sheet on yourself, each in its stamped, self-addressed envelope.

Thank you again for your invaluable participation.

Penny Colville

Appendix B- Instructions for the Pre-Survey

INSTRUCTIONS

The questionnaire may seem long and intimidating. Relax, not all sections apply to every individual, so it's not as time-consuming as it looks.

Please read all the possible responses to questions before you answer.
Please make comments (on the booklet provided) regarding the tedium, inadequacy, awkwardness or indelicacy of the questionnaire. Tie these to items wherever possible.

When you have completed the survey, please call me for a phone or personal interview: 287-1206 evenings; 842-9246 at work.

Thank you,

Penny Colville

If you are confused about the meaning of questions about your job this may be useful:

DEFINITION OF TERMS

Client - any individual or group within or outside the organization who gets a product/service from the educational technologist (ET) or her group.

Product - any "deliverable" the educational technologist's services are used to design, prepare, produce or revise: such as instructional packages, computer software packages, video disks, video tapes, films, slide/tapes, print-based courseware, needs analysis, proposal, evaluation, task/job analysis, instructional analysis or report.

Unit - a self-contained collection of individuals or department within an organization which may include some or other ETs, content specialists, production specialists and clerical staff. A faculty or training division could constitute a unit.

Project - A large scale undertaking or process engaged in by a number of individuals within a unit or small company which results in products.

Appendix C - Covering Letter for the Survey Instrument

May 1987

Dear Graduate or Near-Graduate,

Ever wonder what other ET's are dc ' g? Interested in a network?

Attached you will find a questionnaire which is designed to evaluate the outcomes of the M.A.(Educational Technology) degree program at Concordia University. Completed and returned, it will add immeasurably to our assessment of the degree in terms of professional preparation (among other important criteria). **The result will be a detailed account of the current activities of the "alumni", and meaningful summaries of this information will be sent to participants in this survey.**
It is not like other surveys. This study will be the very first formal study of outcomes with an eye to directing student curriculum decision-making. We are attempting to come as close to a census as possible. Your experience is important, and the data can be completely private if you wish. The questionnaire and an information sheet on yourself can be returned separately. **The information sheet will complete a centralized "alumni" file.** The file will give fellow students or the department (and even prospective head-hunters) a system through which to contact you, and you them. The specific uses of the network will be determined by the results of the study.

I am aware that some of you have already participated in the Board of Graduates study of last year or Claude Lebel's recent survey on DICAL courses. I thank you for making time again; on this occasion you will get some interesting feedback. I am also aware that many of you have kindly participated in other student's studies, and they in yours. I hope your comradery is still in place.

You should find attached the (1) questionnaire (2) an info sheet to fill out on yourself (3) a stamped, self-addressed envelope.
If you decide to return the information sheet on yourself separately from the questionnaire you will receive a second mail-out.

Thank you again for your invaluable participation.

Penny Colville

Appendix D - Reminder letter

July 1987

Dear 'Ed Tech' graduate,

Happily, 25% of the educational technology "alumni" have responded to the questionnaire I sent out at the end of May. Still, for a group of this type we expect and need a higher response rate, particularly from those of you who have been in the work force for several years.

Much interest has been expressed in a network for the purposes of sharing skills, references and advice, and filling employment opportunities. We would like you to be a part of any association that may be encouraged and shaped by the results of this study. For this we need some information on your activities.

Some of you may have been waiting for the mail strike to end; or you may have found yourself in a busy period, then assumed it was too late to reply. Please reply now - your experience is important, and **your response will be welcome as late as the end of August.**

I remind you that this outcomes study is my thesis, and appeal to you to show your comradery by participating. Remember also, that it will provide feedback to guide student's curriculum decision-making. I realize many of you participated in the B.G.S. study and Claude Lebel's survey; many of you have kindly participated in other student's thesis studies, and they in yours. This time, participants will receive feedback on the survey's results. I will be finding out what educational technology alumni are doing, where, in what fields, at what level of responsibility, with what satisfaction, and with what perceptions of their professional preparation.

If you are concerned about privacy, information sheets and survey forms may be returned in different envelopes; however, they are immediately separated if they are returned together.

Sorry to bother you if you have already returned your response form, and thank you in advance for taking that hour or so and getting this back to me.

Sincerely,

Penelope Colville

Appendix E - Instructions for the Survey Instrument

INSTRUCTIONS

The questionnaire may seem long and intimidating. Relax, **all parts of the questionnaire do not apply to every respondent** so it's not as time-consuming as it looks..

-some sections ask for feedback about every course offered, but you probably only took 13

Please read all the possible responses to questions before you answer.

Estimated completion time: 45 mins. to 1 hour

If you are confused about the meaning of questions about your job this may be useful:

DEFINITION OF TERMS

Client - any individual or group within or outside the organization who gets a product/service from the educational technologist (ET) or her group.

Product - any "deliverable" the educational technologist's services are used to design, prepare, produce or revise: such as instructional packages, computer software packages, video disks, video tapes, films, slide/tapes, print-based courseware, needs analysis, proposal, evaluation, task/job analysis, instructional analysis or report.

Unit - a self-contained collection of individuals or department within an organization which may include some or other ETs, content specialists, production specialists and clerical staff. A faculty or training division could constitute a unit.

Project - A large scale undertaking or process engaged in by a number of individuals within a unit or small company which results in products.

Appendix F - Survey Instrument

CIRCLE THE APPROPRIATE EXAMPLE, NUMBER OR LETTER.

SECTION I - DEMOGRAPHICS

1.A My AGE is	1.B My SEX is	1.C My first language is
1. under 25	1. male	1. English
2. 25-35	2. female	2. French
3. 36-45		3. other
4. 46 and over		

1.D.You may have decided to keep your questionnaire response anonymous; even so, would you please indicate (generally) where you live.1. Montreal area 2. Toronto area
3. Another Canadian location. Please fill-in city/province_____
4. USA. Please fill in city/state_____
5. Another country. Please fill in _____
Are you from another country? Where?_____
Did you come here to Canada to study?_____

2.PREVIOUS DEGREES
Name,with majors_____
_____

3. BACKGROUND - PROFESSIONAL
Please list one or two major areas you worked in before entering the Ed. Tech. program (if applicable):

Area_____Title_____
Area_____Title_____

4. Are you now working or have you ever worked in a job where you use educational technology skills? (1) **yes** (Go to SECTION II) (2) **no** (Go to SECTION III, page 8)

SECTION II - OCCUPATION

If you are currently employed please describe the job you hold now. If you are not presently employed please describe the last educational technology related job you held.

5. I am going to describe 1) my current job 2) my last job.

6. **A.** My job is/was (1) full-time (2) part-time

B. My job is/was (1) permanent (2) part-time (3) temporary (4) consulting contract
C. If part-time, how many days per week?_____

7. What is your job title?_____
8.TYPE OF ORGANIZATION What is the type of business or institution?

_____

9. THE NAME OF YOUR DEPARTMENT_____
What is its function, basically?_____
_____

10.The name of the company (optional)_____

11. A.The SIZE OF THE INSTITUTION (Weston 1982) (the entire institution or ministry, not the department) is/was:
(1) 5 - 30 (2) 31 - 100 (3) 101 - 999 (4) 1,000 - 4,999 (5) 5,000 - 9,999 (6)10,000 - 19,999
(7) 20,000 or more
B. The size of the department (1) 8 or less (2) 9 to 15 (3) 16 to 30 (4) 30 to 50 (5) 51 plus

12.My yearly salary for the job I'm describing is/was (THANK YOU FOR ANSWERING THE QUESTION. THE INFORMATION IS STRICTLY CONFIDENTIAL.)
If you are contractual, multiply your daily rate by 240.

(1) under 12,999 (2)13 - 20,999 (3)21 - 27,999 (4)28 - 35,999 (5)36 - 43,999
(6)44 - 54,999 (7)55,000 plus

13. Years of EDUCATIONAL TECHNOLOGY related job experience (1) 0 -2 (2) 3 -5 (3) 6 - 10
(4) 11 - 20

14.The longest time I have held one educational technology position is _____ years.
15.I have held ____ full-time educational technology related jobs since I left the program.

16. OCCUPATIONAL CHARACTERIZATION

The following is a list of activities performed by many educational technologists in their occupations. The activities have been sub-divided into these catagories: Problem Identification, Design, Production, Resources and Services, Evaluation, Management, Communication, and Professional Development.
Please respond to each activity/skill statement in 2 ways:

1. Importance to Current Job : The degree to which you perceive this activity to be essential to the job you are describing. The scale means the following:

1	2	3	4
no importance	some importance	quite important	essential

2.Received mainly: Did you acquire this skill :
(PD) in a previous degree or job,
(ET) in the Educational Technology program, or
(OTJ) On The Job - in an Educational Technology related job you performed since being in the program?

PROBLEM IDENTIFICATION

ACTIVITY/SKILL	Importance to Current Job	Received mainly:
1. Conduct a needs analysis	1 2 3 4	PD ET OTJ
2. Evaluate conclusions of a needs analysis	1 2 3 4	PD ET OTJ
3. Use cybernetic tools to analyse an existing or proposed system	1 2 3 4	PD ET OTJ
4. Propose a plan to act on analysis results	1 2 3 4	PD ET OTJ

	Importance to Current Job	Received mainly:
5. Conduct a task and content analysis (with or without domain experts)	1 2 3 4	PD ET OTJ
6. Analyse the learning environment	1 2 3 4	PD ET OTJ
7. Analyse learner characteristics	1 2 3 4	PD ET OTJ
8. Specify product/system standards, goals	1 2 3 4	PD ET OTJ
DESIGN		
9. Use a cybernetic model to design a service or product	1 2 3 4	PD ET OTJ
10. Prepare specifications for materials, systems	1 2 3 4	PD ET OTJ
11. Perform an instructional /task/ job analysis	1 2 3 4	PD ET OTJ
12. Identify and sequence objectives	1 2 3 4	PD ET OTJ
13. Use instructional development techniques to design a product	1 2 3 4	PD ET OTJ
14. Design a program or curriculum	1 2 3 4	PD ET OTJ
15. Select media to be used	1 2 3 4	PD ET OTJ
16. Write scripts, storyboards, materials	1 2 3 4	PD ET OTJ
PRODUCTION		
17. Direct production of materials/review technical quality	1 2 3 4	PD ET OTJ
18. Direct recording sessions	1 2 3 4	PD ET OTJ
19. Direct film, video or stills shoot	1 2 3 4	PD ET OTJ
20. Review final edit/mix	1 2 3 4	PD ET OTJ
21. Typset print materials	1 2 3 4	PD ET OTJ
22. Mount slides, produce photos/graphics	1 2 3 4	PD ET OTJ

	Importance to Current Job	Received mainly:
23. Record sound, perform edit/mix	1 2 3 4	PD ET OTJ
24. Shoot film, video or stills	1 2 3 4	PD ET OTJ
25. Edit film, video or slide show	1 2 3 4	PD ET OTJ
RESOURCES AND SERVICES		
26.Determine service priorities for an educational media unit, production facility or resource-based learning centre	1 2 3 4	PD ET OTJ
27.Select hardware to meet service or production needs	1 2 3 4	PD ET OTJ
28. Determine supplies required	1 2 3 4	PD ET OTJ
29. Design storage and retrieval system	1 2 3 4	PD ET OTJ
30. Assist clients in use of the services	1 2 3 4	PD ET OTJ
31. Maintain equipment, arrange or perform repair	1 2 3 4	PD ET OTJ
EVALUATION		
32. Determine criteria for product/system evaluation	1 2 3 4	PD ET OTJ
33. Design formative/summative evaluation and data collection procedures	1 2 3 4	PD ET OTJ
34.Conduct formative/summative evaluations to see if the product/system meets design specifications	1 2 3 4	PD ET OTJ
35. Pilot test prototype materials	1 2 3 4	PD ET OTJ
36. Collect evaluation data	1 2 3 4	PD ET OTJ
37. Interpret evaluation data/statistics	1 2 3 4	PD ET OTJ
38. Revise components, sequence based on evaluation data	1 2 3 4	PD ET OTJ

MANAGEMENT

	Importance to Current Job	Received mainly:
39. Monitor opportunities to initiate projects	1 2 3 4	PD ET OTJ
40. Use a cybernetic model to determine policy and improve system functioning	1 2 3 4	PD ET OTJ
41. Interview and hire staff	1 2 3 4	PD ET OTJ
42. Prepare staff plan, plan of equipment, materials,facilities and services to optimize productivity and quality	1 2 3 4	PD ET OTJ
43. Prepare budget for the unit/company	1 2 3 4	PD ET OTJ
44. Liase with managers or members of other units	1 2 3 4	PD ET OTJ
45. Supervise unit members	1 2 3 4	PD ET OTJ
46. Arrange for reproduction and dissemination of the product	1 2 3 4	PD ET OTJ

COMMUNICATION

47. Counsel with clients, other managers about project matters, plans, designs	1 2 3 4	PD ET OTJ
48. Inform clients, company, unit about educational technology practices	1 2 3 4	PD ET OTJ
49. Write proposals, presentations, reports	1 2 3 4	PD ET OTJ
50. Write journal articles	1 2 3 4	PD ET OTJ
51. Communicate effectively with personnel to produce desired products/outcomes	1 2 3 4	PD ET OTJ
52. Lecture or instruct	1 2 3 4	PD ET OTJ
53. Interact with learners and subject matter specialists to identify needs and pilot test materials	1 2 3 4	PD ET OTJ
54.Act as a knowledge engineer with subject matter specialists	1 2 3 4	PD ET OTJ

PROFESSIONAL DEVELOPMENT

	Importance to Current Job	Received mainly:
55. Keep abreast of ET related concepts, theories, research directions	1 2 3 4	PD ET OTJ
56. Attend conferences, seminars,for professional development	1 2 3 4	PD ET OTJ
57. Synthesize, develop models and techniques for use on development projects	1 2 3 4	PD ET OTJ
58. Analyse research data related to the unit's activities	1 2 3 4	PD ET OTJ
59. Keep abreast of current techniques and approaches	1 2 3 4	PD ET OTJ
60. Design research studies to test existing and new educational technology theories	1 2 3 4	PD ET OTJ

17. What skills important to your current job do you feel you are weak in?

18.A What skills do you feel are important to advance your career in general?

B. What do you mean by advance; what area of skills are you planning to move into?

19.Have you gone about acquiring the skills you need formally or informally? Explain.

20. How instrumental were you in defining your own job?

1	2	3	4
not very			very instrumental

21.The next series of questions have to do with how your work environment lends itself to educational technology practices and what success have you had in influencing your environment in terms of gaining acceptance of these practices. How would you rate your success at improving your organization by gaining acceptance for educational technology methodologies?

low			very satisfactory
1	2	3	4

22.A. My work environment, in terms of **receptivity to change**, is

Conservative		Moderate		Progressive
1	2	3	4	5

B. To what extent is any conservatism a function of finances (as they see it)?

Not to do with it			Much to do with it
1	2	3	4

C. To what extent is any conservatism a function of organizational structure and management?

Not to do with it			Much to do with it
1	2	3	4

23. A. Number of other educational technologists in the unit: (1) none (2) 1 - 4 (3) 5 - 10
(4) 11 or more
B. Number of other educational technologists in the company (1) none (2) Estimate:_____

24. PROGRAM EMPHASIS: Check off one, two or three (no more than three) of the following areas to indicate what you believe the emphasis of the program is (given course offerings and required components), regardless of your particular concentration.

(1) Problem Identification (2) Design (3) Production (4) Evaluation (5) Management
(6) Communication (7) Professional Development /Research (8) there is no emphasis; general approach

25.I have applied for jobs that I did not get. T F
I think the reason was a skill deficiency T F
Explain_____

_____

26.Please RANK the graduate program experiences you had in terms of degree of usefulness to you.
(1) coursework _____ (2) internship _____ (3) thesis/thesis equivalent_____
(4) research assistantship_____ (5) teaching assistantship_____ (6) colloquiums
(7) largely unstructured events with other students and faculty
(8) the total (synergistic) experience _____ (9) other . Explain._____

_____

27. Looking over the above components, which ones have had the best long-term transfer as far as you are concerned?

_____

Why?_____

28. and which ones do you feel are becoming particularly obsolete?

_____

Why?_____

29.Would you change the emphasis/concentration you took in the degree program?
(1) yes, significantly If you answered 1 or 2 two please explain
(2) yes, somewhat

_____

(3) no, not much
(4) not at all

30.Estimate the effects of the thesis component and degree completion (whether you have finished or not):

A.As far as my employer is concerned, finishing was/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5

B. Check one or both: It would increase my chances of (1) ____ PROMOTION (2) _____ RAISE

31.In terms of how well I feel I do my job, finishing was/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5

32. In terms of my future plans, finishing will/would

BE NEGATIVE		MAKE NO DIFFERENCE		BE POSITIVE
1	2	3	4	5

SECTION III _____

33.If you are not now or never have been employed in an educational technology related field, please answer the following section:
I have looked for educational technology related work T F

34.What is your primary present activity? (1) working but not using educational technology skills (2) continuation of formal education (3) unemployed and starting a job soon (4) unemployed and actively seeking employment (5) unemployed, not seeking employment, but plan to later (6) unemployed and do not intend to work in the forseeable future

35.Which of the following do you see as the single biggest problem you have had finding work in an educational technology capacity: (1) skill qualifications (2) educational qualifications (3) a tight job market in the field (4) a generally tight job market (5) finding a job where I want to live (6) finding a job with the salary I expect (7) finding the right educational technology job (8) sex discrimination (9) race discrimination (10) Other. Explain_____

36.How long have you been actively seeking employment? (1) 1-5 months (2) 6-12 months (5) over a year

37. Do you expect to be employed within the next year (1) yes (2) no

SECTION IV
PROGRAM CHARACTERIZATION_____

38.A I have completed the M.A. in Educational Technology
T F

38.B. The only remaining requirement is my thesis. T F

If you answered true to 38.B answer

38.C. Check one:

a) I am now working on my thesis.
b). I am not working on my thesis now, but I intend to finish.
c). I have requested the Diploma in Instructional Technology
d. I just don't intend to finish

39. I entered the program in _____; Stopped close association in _____

40. I was a **A.** full-time student throughout this period.
B. part-time student for at least part of this period.
If you were part-time, why?_____

41. My degree was financed largely (1) by my own, my family's means (2) through student loans (3) by my organization (4) through TA or Reasearch Assistantships (5) other. Explain _____
_____

42. **a.**Your thesis was (1) experimental (2) production/evaluation (3) theoretical (4) NA
b.Estimated time spent on your COMPLETED thesis :____ months. Full-time_____ Part-time _____

43. Please circle the thirteen (or more) courses that you took

100 604 Fundamentals of Educational Technology
101 607 Philosophy of Educational Technology
102 606 Educational Cybernetics
103 640 Quantitative Methods and Research Design I
104 641 Quantitative Methods and Research Design II
105 613 Learning and Instructional Theories
106 654 Instructional Design
107 643 Measurement and Evaluation in Education

300 637 Educational Simulation and Gaming
301 662 Computer-based Systems in Education and Training
302 695 Topics in Instructional Informatics I
303 696 Topics in Instructional Informatics II
304 660 Introduction to Educational Computing
305 663 Small Computer Systems for Teachers and Trainers
306 664 Computer-assisted Instruction
307 665 Modeling, Simulation and Intelligent Tutoring Systems

200 623 Planning and Producing Audio-visual Materials
201 624 Theory of the Moving Image
202 681 Seminar on Research and Writing for Audio / Video and Computer Media
203 682 Lab in Studio Television Production and Evaluation for Education
204 683 Lab in Studio Television Production and Evaluation for Education II
205 684 Lab in Small Format Television Production
206 685 Lab in Audio Production and Evaluation
207 686 Lab in Motion Picture Production and Evaluation
208 636 Formative Evaluation of Educational Materials
209 642 Research and Evaluation in Educational Media
210 635 Principles of Educational Message Design

400 593 Management of Learning Resources
401 653 Educational Systems Analysis
402 701 Administration of Educational Technology Units for Education and Training
403 651 The Concept of Educational Planning
404 652 Educational Planning: a Comparative Perspective

700 673 Selected Topics in Instructional Technology for Adult Learner
701 616 Research and Theory in Adult Learning
702 691Advanced Readings and Research in Educational Technology I
703 691Advanced Readings and Research in Educational Technology II
704 693 Special Issues in Educational Technology
705 632 Topics in Curriculum and Instruction I

500 611 Psychological Foundations of Educational Technology
501 631 Curriculum Design

600 622 Mass Communications Research
601 655 Educational Technology in Developing Nations
602 702 Development and Organization of Distance Education
603 614 Human Communications I
604 615 Human Communications I I
605 602 Educational Technology and Society

Other:_____

If you chose a 700 number, what was the topic you concentrated on?

_____

699 **Supervised Internship**
690 **Thesis or Thesis Equivalent**

*44. Are there any courses that you regret not taking (please explain).*_____

_____

*45. Explain your internship*_____

_____

46 . It was (1) unfunded (2) salaried (3) an honorarium
47. It was advertised or obtained through faculty (1) yes (2) no

48. I secured my first educational technology related job (1) directly through my internship (2) while I was still enrolled and before I completed my thesis (3) after I graduated

49. Select appropriate answer. Completing the program 1) took less time than I expected 2) about as long as I expected 3) longer than I expected: why, do you think?

_____

SECTION V
ATTITUDE _____ LifeStyle

50.Regardless of the program itself, do you think these aspects were an important benefit to you?
A.attending university or being in touch with the university (1) definitely yes (2) probably yes (3)not really (4) definitely not.
B.studying issues raised in educational technology (1) definitely yes (2) probably yes (3)not really (4)definitely not.

51.Circle the number preceeding NOT MORE THAN 3 FACTORS that best characterize the life style you have valued: (Dale, 1975)
(1) good family relationships
(2) freedom to pursue your own interests
(3) steady, secure employment
(4) opportunities for meaningful work
(5) Good and interesting friends
(6) favorable geographic location
(7) freedom from financial worry
(8) access to art institutes, literature, culture
(9) a challenging job.

52.Listed below are some of the reasons people pursue degrees. Please rank them in the order of their importance to you at the time you entered the program. (Dale, 1975; Reichard & Sutton, 1978)

(a) to be able to make more money _____
(b) to prepare myself for a new career _____
(c) to broaden my intellectual or cultural awareness _____
(d) to add to my skills so I could move up in my existing career _____
(e) to move into a particular job market _____
(f) to prepare for further graduate or professional education _____
(g) other _____
Explain_____

SECTION VI
EXPECTATIONS ---------- **Program**

53. A. How clear were you **when you entered the program** on the future you wanted to pursue?

1 2 3 4
Not clear very clear

B. How clear were you **when you finished or left the program** on the future you wanted to pursue?

1 2 3 4
Not clear very clear

C.In retrospect, what kind of idea did you have about how course options related to future options?

1 2 3 4
Not clear very clear

54.How did the job oportunities you found in the educational technology field match your expectations?

1 2 3 4
not nearlyas good much better than
as I expected I expected

55. How much do you think having a good ed. tech job depends on being flexible about where you live?

1 2 3 4
not at all very much

56. It is possible now to get the master's degree with an extended internship with report relating your work to theory. Would you have taken this option had it been offered then?

1 2 3 4
very unlikely very likely

57 Instructional Design is now a required course and there are two levels offered. Judging from the course list you may notice other changes in the curriculum since your time; are they in the right direction? What do you think direction should be? Comments please.

_____
_____
_____

58.If you could start over again
Would you choose to pursue an educational technology degree?
(1) yes definitely (2) yes probably (3) probably not (4)definitely not (if you answered 3 or 4, what would you do?_____

59.If you answered 1 or 2, would you do it at Concordia U.? (1) yes 2) there is little other choice for me (3) no, I would make an effort to go elsewhere.

60.What are the greatest strengths and weakness of the program?

STRENGTHS	WEAKNESSES
_____	_____
_____	_____
_____	_____

61.A How necessary do you think it is to provide more formal guidance through the program?

1	2	3	4	5
not necessary		could be more done		much more guidance needed

B. Do you think the ED TECH department itself should take a more active role in initiating graduates into the "market"?

1	2	3	4	5
not necessary		could be more done		much more guidance needed

62.Is there anything you would like to expand on in relation to your professional preparation, personal satisfaction and the field of educational technology that you feel may be useful ?

Appendix G - Information Sheet

INFORMATION SHEET

NAME

_____

ADDRESS_____

_____**Postal Code**_____

PHONE_____

PLACE OF
WORK/OCCUPATION:_____

_____

INTERESTS IN THE EDUCATIONAL TECHNOLOGY FIELD:

_____
_____
_____

I (a) would (b) would not like a summary report of the findings of this study.
Please (a) do (b) do not put me on a master mailing list for the department.

What about belonging to a network of educational technologists?
Do you think a kind of newsletter should be part of it?
_____ **Do you think reunions should be part of it?**_____
Do you think it should include or be limited to a "data bank" of names, addresses and current
interests?_____
Would you contribute, if asked, a $3.00 fee towards a directory of alumni?

_____
How do you think a network could be used?

_____
_____
_____

Appendix H - List of Jobs and Businesses

Teachers/Lecturers
(This category includes all teaching positions, listed here are only those with direct relevance to educational technology).

Teacher, Special Education Media; public school board.
Assistant professor, Instructional Psychology, Athabasca University.
Lecturer, Educational Technology Program; Concordia University.

Instructional Designer

Training and Development Assistant; Alcan.
Senior Instructional Designer, Softwords.
Instructional Development Consultant; Isreali Defence Forces.
Training consultant, engineering firm.
Educational Technology Specialist, distance education university.
Analyst - Conseil en formation, Federation des caisses populaires desjardins.
Specialiste en moyens et techniques d'ensignment, CEGEP Montmorency.
Training program developer, Paramax Electronics.
Instructional Designer, university computer literacy project.
Training Projects Designer, CN Rail.
Instructional Development Specialist, Transportation Training, CN Rail.
Educational Technologist, Transportation Training, CN Rail.
Performance and Instruction Technologist, Transportation Training, CN Rail.
Instructional Designer.

Training Project Management /Consultancy

Manager of Training, Tricom Automotive Dealer Systems.
Project Manager, Educational Technology Department; Concordia University.
Consultant.
System Co-ordinator, training and support, Leoplold Property Consultants.
Instructional Design Consultant, government and crown corporations.
Training Development Advisor; Army School of Training Support; Department of National Defence.
Instructional Designer, (freelance) for computer-based training developers and an open university in Isreal.
Manager, Design and Development; Microtel Learning Services (industrial technical training).
Training Co-ordinator; Dow Chemical, Italy.
Management Consultant, also workshops and seminars in university.
Management training consultant; Lucinda Bray and Associates (own firm).
Project Manager, A.R.A. Consultants (industrial training).
Project leader, computer-based education division of a technical institution.
Technical Director, Consultant; corporate broadcasting.
Charge de Projet; Les Systems Metavision (Computer-based training production).

Information Systems Consultant; Synerlogic (software developers).
Training Systems Consultant; Synerlogic.
Consultant on Curriculum Planning and Systems; Telecom Executive Management Institute of Canada.
Software Development Editor; DeLaurentiis Designs Inc.
Partner, Know-it-all Teaching Materials.
President, On/Q Corporation; computer-based communications and interactive video-instruction.
Training co-ordinator, National Industry Development Bank.

Human Resources Development

Director, Human Resource Planning and Development, Rothman's Benson and Hedges Inc.
Senior Training and Development Officer; Human Resources Department; international development and research agency.
Assistant Manager, Human Resources Development, Royal Bank of Canada, sales and service.
Director, Human Resources Development and Training, Ecuavisa, Senefelder and Ensa.
Integrated Logistic Support, Personnell and Training; Department of National Defense, Canada.
Project Manager, Research and Development Department (faculty development) Sheridan College.
Specialiste en moyens et techniques d'ensignment (faculty development (Dawson College.

Educational Services Planners/Administrators

Principal, Kenya Commercial Bank Training School.
Senior Policy Analyst,Department of Communications, Canada.
General Secretary (CEO) International Bahai Religious Community, clearing house for instructional products.
Director, Centre of Adult Education, public school board.
Journalist, Co-ordinator; federal development corporation promoting non-formal education, Belgium.
Executive Producer, provincial educational television broadcaster.
Director of Radio Programming, CBC Northern Quebec.
Resource Development Officer, and Provincial Industrial Training Consultant; B.C. Ministry of Advanced Education and Job training.
Associate Director Educational Technology Centre; ACCESS, educational communications network.
Assistant to the Academic Dean, Champlain Regional College.
Director, Academic Computing; Academic Computing Centre, Mercy College of Detroit.

Director, Educational Support Services, college education department.
Head, Educational Technology Division, Baccarat College of Advanced Education.
Head, AVISTA section, Audio visual in-service teaching area, Concordia.
Co-ordinator, Handywoman program, YMCA of Montreal.
Director of Part-time faculty; education Dept., university.

APPENDIX I - Description of Internships

Description of Internships

1. A/V house developing training programs
2. ETV consultant in Quebec
3. A/V consultant on video and other productions at my CEGEP
4. Set up a computer lab at an elementary school
5. Designed, taught and evaluated a CAI workshop for adolescents
6. Course development project at CN Rail
7. Collection of ET projects within my present job
8. Developed an authoring system for training at the standard displays for Canadian Patrol Frigate project
9. Preparation of educational materials for the Canadian Bahai Community
10. Worked in studio A audio visual department
11. Two different research grants in adult education
12. Bell Canada curriculum design for technical training
13. Development of instructional materials in industry
14. Research project at Concordia
15. Designed and produced interactive video courseware
16. Developed a course
17. Worked on the 6th Canadian Conference on TV research, CJEC and research for Sun Life
18. Training materials development
19. Design and implementation of supervisory courses at Canada Post
20. Needs assessment for a non-profit organization
21. A slide tape production for the department
22. Part of a team designing a needs assessment for a medical unit at the Montreal General
23. Working in the department of distance education at the Ministry of Education (ESL)
24. Applied ed tech to work at McGill
25. Book review editor, CJEC
26. Designed three video tapes to train nurses
27. Project manager for a firm which produced CBI
28. Create, administer and market the HandyWoman program (YWCA)
29. Film production contract at NFB
30. Developed instructional materials for parents of language-impaired children
31. Training: subject matter experts to develop self-instructional packages at CN Rail
32. Needs assessment at CN engineering systems
33. Needs analysis, adaptation and development of training materials for a consulting company
34. Researcher, CBIRL McGill
35. Research about Telidon throughout Canada
36. Helped produce an AMTEC conference
37. St. John's Ambulance basic training in life skills
38. Designed instructional package in pharmacology for Dawson college
39. Designing five modules for management training at Bell Canada
40. Educational materials for a bank
41. Worked as an assistant in the Graphics department
42. Comparative analysis of instructional design modules for program
43. Evaluation and expansio of a computer literacy course at Concordia
44. Designed and implemented a training course at CN Rail
45. Pictoral research in the program
46. Distance education project

47. Teaching Logo
48. Helped set up Avista
49. Development of multi-media modules; planning an arts and games centre for teachers
50. Media design, school board media centre
51. Eight months at the National Research Council
52. Design, production and evaluation of three video-based packages for National Defense TESL
53. Lectured in educational media at McGill University