

iTeacherEd Research Project Year I

**Report on Student Questionnaires
Fall 2002 and Winter 2003**

Report submitted to:

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Introduction

In the Fall of 2002, the i-Teacher Ed research team distributed questionnaires to elementary pre-service teachers in their pre-internship semester. These questionnaires consisted of a student self-evaluation rubric on the use of and attitudes toward information and communications technology (ICT) (see Appendix A) and a questionnaire to evaluate the fall semester ICT modules (see Appendix B). The data gathered from these questionnaires was used to construct a third questionnaire (see Appendix C), which was distributed to students near the completion of the winter 2003 semester. This third questionnaire was designed to evaluate the winter semester ICT modules and to gain insight into pre-service teachers' views on the course modules throughout the pre-internship year in general.

This report begins with a brief description of each of the ICT course modules (five modules each semester). Following this, select data from the self-evaluation rubric on use of and attitudes toward ICT (sections one and two) is presented in tabular form. A brief analysis of select questions on this self-evaluation rubric is then presented through graphical representations of questionnaire data.

A discussion of the information contained in the questionnaire to evaluate the Fall 2002 modules is not included in this report, primarily because the information obtained through analysis of these questionnaires was used to construct Question 3 on the Winter 2003 questionnaire. In other words, when students were asked in the Fall of 2002 to comment on the value of the ICT modules and to make suggestions for changes that should be made to the modules, the following ideas emerged:

- The modules should be worth marks in order for students to take them seriously
- There should be enough time to complete all module requirements during class time (i.e., no homework assigned)
- The modules should be made optional, not mandatory, for all students
- ECMP 355 should be made mandatory for all students in the elementary program
- Students who have taken (or are taking) ECMP 355 should be exempt from the modules
- Students should have more input into the content of the modules
- Students should be grouped according to levels of technology experience and knowledge for the design and completion of technology modules
- The modules seemed a bit isolated— more connections should be made with methods classes
- The module topics were too rushed

Hence, in question 3 on the Winter 2003 questionnaire, pre-service teachers were asked to indicate their level of agreement or disagreement (on a scale from strongly agree to strongly disagree) to the above statements. The results of this question are presented in tabular form in the last section of this report.

iTeacherED – Overview of the Preservice Modules – Fall 2002

In the Fall 2002 semester, technology-based modules were delivered to approximately 150 students in six sections of EPS 215. The modules delivered to each section were fundamentally similar. However, as the various course sections target different grade levels (e.g., primary, elementary, middle years), the technology-based modules were modified accordingly.

Overview of Module #1:

The Evergreen Curriculum and Grassroots - Module #1 covers key online resources made available by both the province (Saskatchewan Learning) and the federal government (SchoolNet and Grassroots). The Faculty has promoted these sites as ones which are essential resources, especially for teachers practicing in Saskatchewan schools. Key areas of study in this module include:

- Evergreen Curriculum – The Evergreen Curriculum is the result of Saskatchewan Learning’s efforts to digitize and to provide simple access to the wealth of curriculum material, foundational documents and online resources mandated by the provincial educational body.
- Saskatchewan Learning’s Virtual Resource Centre (VRC) – The VRC is a collection of educational websites which have been screened by Saskatchewan teachers and collected and categorized by Saskatchewan Learning. The VRC is a useful collection of hundreds of excellent web resources which are also linked directly from curriculum documents. Knowledge of this site allows teachers to incorporate excellent web material into appropriate areas of practice, and could potentially reduce hours of wasted online searching for appropriate materials.
- Grassroots – Grassroots is a federally funded (Industry Canada) program designed for teachers to help classrooms incorporate appropriate uses of information and communication technologies (ICT) into classrooms. The result of this program is a wealth of teacher created resources which can be utilized into specific curriculum areas. Additionally, those involved in developing the Grassroots projects (teachers and students) will have gained important entry-level skills for further integration of ICT.

These were the key areas explored in Module #1, however, there are many sub-areas of each resource which were explored in more detail. The module was designed simply to expose preservice teachers and course instructors to the wealth of information available to Saskatchewan teachers.

Overview of Module #2:

The Assessment of Online Materials - Modules #2 focused on teacher assessment of online resources. The Faculty acknowledges that while the resources highlighted in module #1 (Evergreen Curriculum, Virtual Resource Centre, Grassroots) are in themselves overwhelming, teachers and students should have the necessary skills to perform skilful online searches and to assess the resources found. While there are many web sites that offer valuable and trustworthy information, there are just as many web sites (if not more) that contain false or misleading information. Teachers and students must be aware of this and develop the skills to identify bias, and as well, to find sites that are appropriate and beneficial to learning.

This module presented many examples and non-examples of appropriate web material. In some instances, bias or falsehoods were easy to detect. In some cases, these characteristics were much more discreet. Students were able to develop their own checklist of attributes for appropriate web material, and had the opportunity to use this “template” on a site of their choice.

Overview of Module #3:

Using Online Resources to Support Instruction – In module #1, key online resources were identified. Module #2 was an overview on methods used to assess online resources. Module #3 takes the next appropriate step to demonstrate how such online resources can be used in educational settings.

This module focused on the following major instructional designs: direct instruction, indirect instruction, experiential learning, independent learning and interactive instruction. Through these various designs (reinforced in other curriculum methods classes), and from the various skills and knowledge gained in previous technology-based modules, students gained a better understanding of the connections between curriculum and technology.

Overview of Module #4:

Creating Online Resources Using Filamentality - Modules #4 outlined the very popular process of using and creating “filamentality” sites. Filamentality is a fill-in-the-blank interactive web site that guides the user through identifying a topic, searching the web, gathering appropriate Internet sites and transforming these web resources into activities appropriate for learners.

In this module, students were shown a PowerPoint presentation, which identified what filamentality, is, and how it can be used in the classroom. Then, students went through the process themselves and created a “hotlist” through using the filamentality tool.

Overview of Module #5:

Integrating Educational Technology – The previous modules allowed student to search for key educational resources, assess resources and to create their own “hotlists”. The fifth module focuses on how technology can be integrated into classroom teaching. More specifically, it looks at one particular case of integration in the development of a teacher webpage.

In this module, students are helped through the process of developing a teacher webpage which could be used to enhance instruction. The participants are shown various ways of creating and hosting web material (from the web-based Geocities web development wizard, to using Microsoft Front Page). Webpages were created by individuals or groups, and collected, compiled and made available to all students in the classroom. Beyond the skills-development, students were also asked to contemplate the implications of developing resources this way. Key questions, comments and discussion followed on this very important issue.

iTeacherED – Overview of the Preservice Modules – Winter 2003

In the Winter semester, technology-based modules were delivered to the same students as in the Fall. Again, the modules delivered to each section were similar but were modified according to targeted grade-levels.

Modules six through ten focused on various aspects of WebQuests, which are web-based inquiry-oriented activities. Through these modules, students were able to review and explore existing WebQuest material, and as well, develop their own original WebQuest. It was also the hope of the instructors that the WebQuest developed in the module could be used in the field experience of these preservice teachers.

Overview of Module #6:

Review and Exploration of WebQuests -In this module, four basic questions were explored.

1. What is a WebQuest?
2. What are the basic elements of a WebQuest?
3. What constitutes a "good" WebQuest?
4. How might WebQuests be used to enhance teaching and learning?

Through this interrogation and with the use of exemplar WebQuests, students were able to gain a solid background on this topic. Additionally, Module #6 set the stage and provided expectations for next four modules.

Overview of Module #7:

The Design and Development of WebQuests – This module explored the first three major steps necessary to develop a WebQuest. More specifically, the topics included: selecting a topic (appropriate to the design of WebQuests), identifying objectives and identifying resources (to support/enhance the WebQuest). As much of this module is concentrated upon finding appropriate resources, the Fall semester’s modules relating to this topic proved to be essential.

Overview of Module #8:

Designing WebQuests (Process/Evaluation/Conclusion) – This module explored the last three steps necessary to develop a WebQuest. More specifically, students were able to develop the process, evaluation and conclusion components of their activity. Most of this activity was done on paper or electronically through creating an MS Word document.

Overview of Module #9:

Creating WebQuests (Putting It All Together) – This module addresses the final phase in the design and development of WebQuests. This final steps allowed students to create a webpage for their previous work (the previous six steps outlined in Module #6 and Modules #7). This would allow the activity to become a “true WebQuest” as it could now be hosted on the iTeacherEd site. There are numerous examples of student work at this URL:

<http://education.uregina.ca/iteachered/webquests.htm>

This module was quite skills-based, but the previous semester’s modules complemented this technical work. Students were provided with a WebQuest template and were able to simply (relatively) cut-and-paste their work from MS Word to transfer their work to a WebPage with a unique URL.

Overview of Module #10:

Final Touch-ups to the WebQuest - This final module was designed to have students perform final editing and revisions to the WebQuest they had created. The module included a technical checklist for students to apply to their own work. Additionally, both a self-assessment and peer assessment rubric was completed so that students could look critically at their own work, and at the work of others in the classroom. The focus in this assessment process was on constructive support and criticism. As well, students were able to showcase their work through the class time provided.

Use of and Attitudes Toward Information and Communication Technology
 STUDENT Self Evaluation Rubric — Fall 2002
 130 Participating Pre-service Teachers

Section 1: Demographic and General Information (Select Questions)

Question 3

What is your educational background with technology? (Please check all that apply)

None or little experience with technology	6
Self taught	63
High-school computer courses	85
Community based technology courses	4
Technical institute (e.g., SIAST) technology courses	4
University Computer Science courses	25
“Computers in Education” type courses	60
Other (please specify)	5
None or little experience with technology	0
TOTALS	252

Question 4

How would you rate your computer skills?

Excellent	1
Above average	45
Average	72
Below average	12
Poor	0
TOTALS	130

Question 5

How would you rate the importance of computer use by teachers in the classroom?

Computers are valuable tools, which can be used to improve the quality of teaching and learning in school.	110
Computers are a valuable tool, but have limited use in the classroom.	19
Computers are not helpful in improving teaching or learning in the educational setting and should not be used in school.	0
Other (please specify)	1
TOTALS	130

Section 2: Attitudes Toward Information and Communication Technology (ICT)
(Select Questions)

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	TOTALS
4*	I do not think that ICT will be useful in increasing my effectiveness as a facilitator or instructor in the classroom	32	78	15	4	1	130
5	With the use of ICT, I can create instructional and learning materials to enhance my job performance.	3	2	10	91	24	130
7	Anything that computers can be used for, I can do just as well some other way.	17	74	33	6	0	130
8*	The thought of using computers frightens me.	51	50	24	5	0	130
10*	I could use computers to access rich information resources for work and school.	2	1	4	79	44	130
12	I am anxious about computers because I don't know what to do if something goes wrong.	8	37	47	29	9	130
15*	Knowing how to use ICT is helpful in improving learning opportunities for students.	0	1	14	84	31	130

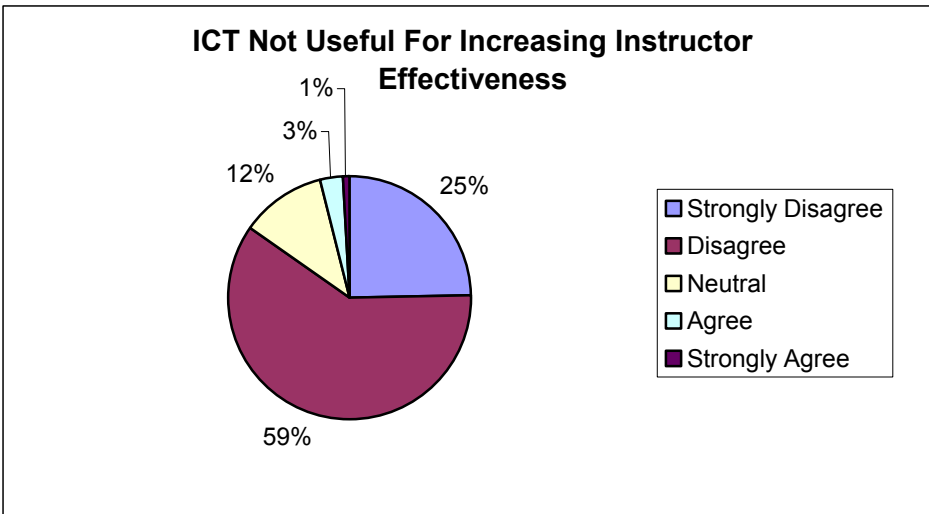
The questions marked with an asterisk (*) are presented graphically in the next few pages of this document.

**Use of and Attitudes Toward Information and Communication Technology
STUDENT Self Evaluation Rubric (Fall 2002)**

Graphical Presentation of Select Questions

Question #4:

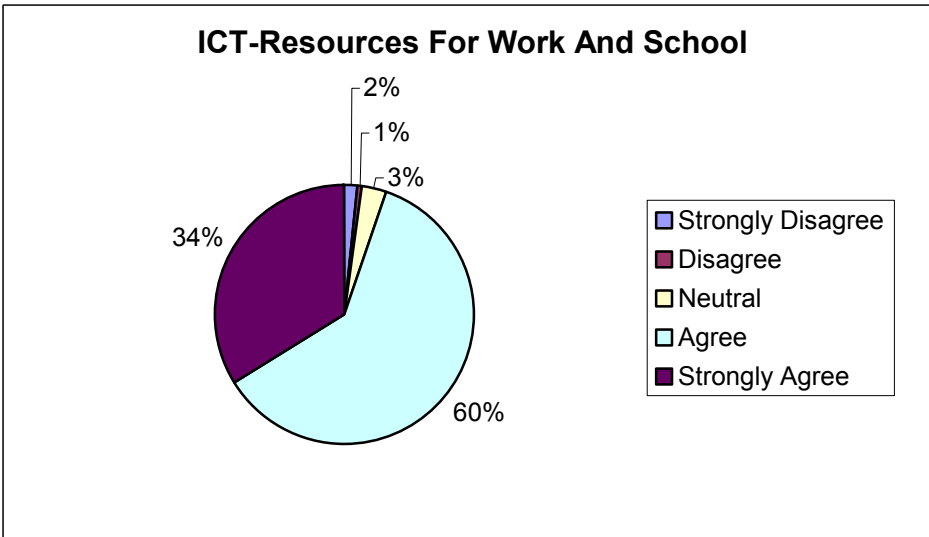
I do not think that ICT will be useful in increasing my effectiveness as a facilitator or instructor in the classroom.



The sum of both the “strongly disagree” and “disagree” is 84%. This appears to show that many students feel that the use of ICT in the classroom is directly associated with teacher/facilitator effectiveness. An additional 12% were neutral on the subject and only a very small percentage (4%) disagreed or strongly disagreed with this correlation (use of ICT helps to increase teacher effectiveness).

Question #10:

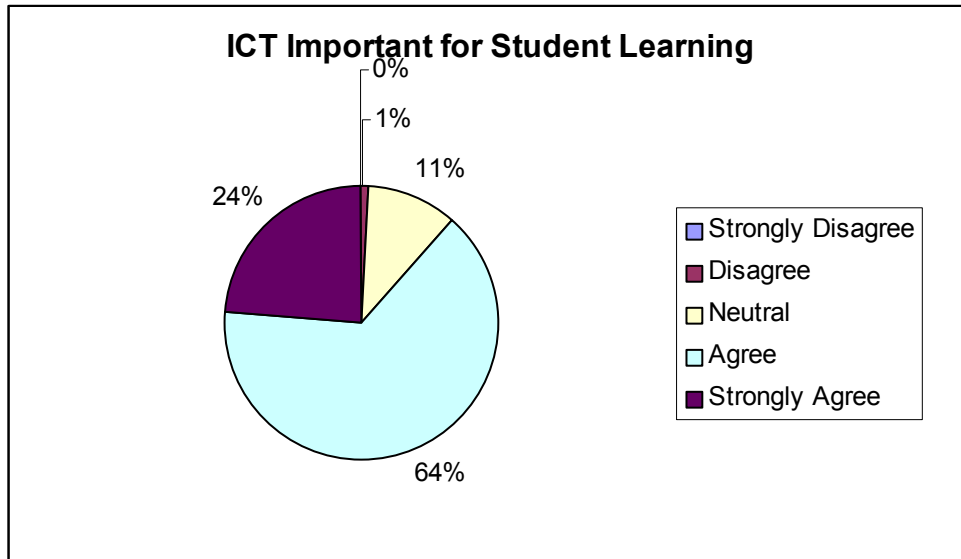
I could use computers to access rich information resources for work and school.



Additionally (in relation to question #4), 94% of the respondents felt that ICT provided rich information resources for work and school.

Question #15:

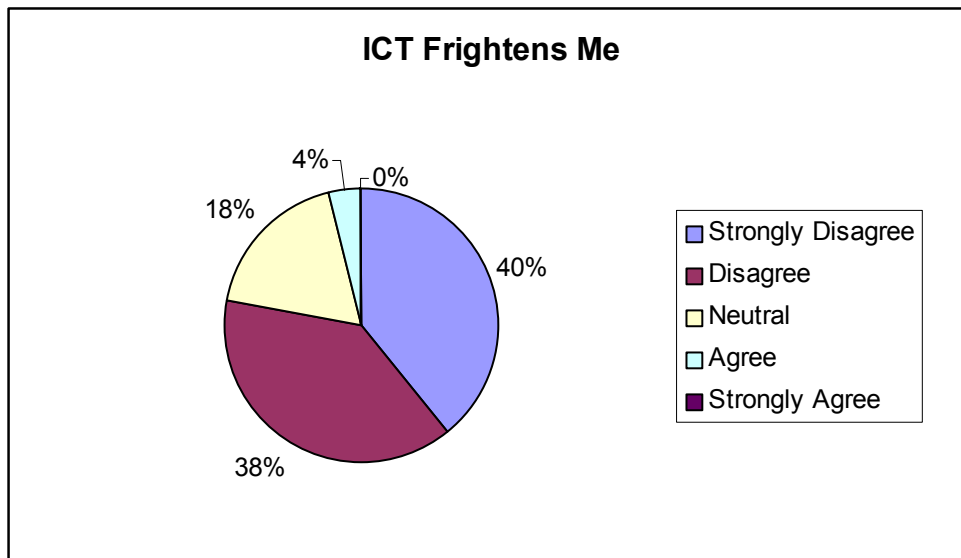
Knowing how to use ICT is helpful in improving learning opportunities for students.



Also (in relation to question #4 and #10), 88% of the respondents believe that ICT helps to improve learning opportunities for students.

Question #8:

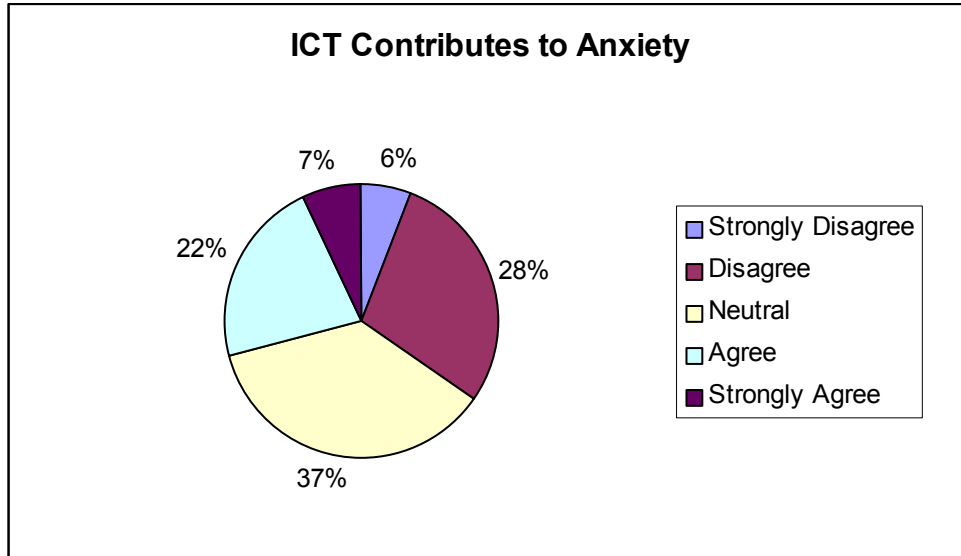
The thought of using ICT frightens me.



Only a small percentage (4%) of the respondents report of fear in using ICT.

Question #12:

I am anxious about computers because I don't know what do to if something goes wrong.



Although most respondents did not “fear” technology (question #8), a large percentage (59%) felt that it contributed to their anxiety. Only 13% felt that it did not contribute to their anxiety, while a large portion (37%) reported “neutral”.

Some questions that may be interesting to explore from these statistics could include:

- 1) If students feel so strongly about the positive benefits about technology in teaching and learning, from where are they getting this “notion”? Teachers? Professors? From their own experience as students? Popular media?
(I think this is an interesting question, as you may not get this degree of positive results from teachers in practice, or members of the Faculty).
- 2) In what ways do ICT contribute to this reported “anxiety”, and is this a hindrance to preservice teacher learning with and using technology in practice?
- 3) In what ways can this reported “anxiety” be reduced?

Evaluation of Technology Modules—Winter 2003
Questions 1 and 2
63 Completed Questionnaires

As can be viewed in the questionnaire (Appendix C), the first two questions of the technology modules evaluation questionnaire (administered in April 2003) asked the pre-service teachers to comment on the use and value of the technology modules in terms of their perception and understanding of the integration of technology into their pre-internship classroom and into classrooms in general. A synthesis of the information provided through students' responses to these two questions yielded the following network of themes related to the first year of the i-Teacher Education project.

“In internship”

It was not always clear why, but several responses expressed that the ideas and skills learned in the modules would be used in internship, but not in pre-internship. There was a general interpretation that because time was short and the ideas were new, students would not get around to using technology until their internship.

Not in this preinternship but it did help me understand what they are all about and I'm going to try to incorporate some in internship.

... [I] may try a webquest in internship.

“In later years...”

In addition to predicting use in the next few months (i.e. during internship), some students indicated that the ideas and skills learned in the modules would be put into use “later”, i.e., some time in the future.

I was unable to use it in my class because I did not have time during my block...
I would definitely use this technology in the future.

[The modules] made me more aware of the technology resources available for classroom instruction (possibly in the future).

While this response indicates that insufficient time was the major impediment to integrating technology into the pre-internship classroom, several other responses indicated even more significant impediments. According to the pre-service teachers, it appears that the situation in schools right now actually hinders or discourages pre-service teachers from integrating technology. There were comments about archaic computer equipment and not enough time for implementation.

... the computers at our school were archaic and it would have taken 3 hours to do a 45 minute lesson. However, I will be able to do this in later years when I have decent computers.

.. there's just not enough time to do something of that magnitude in the semester, in addition to all of the other expectations.

It is difficult to distinguish between pre-service teachers' comments about time related to being a student or being a teacher. It is not known precisely whether they are referring to the time spent learning the ICT course modules in the Teacher Education program or the time actually spent in a pre-internship classroom teaching elementary students. There is substantial evidence, however, to suggest that time in general is a factor in pre-service teachers' decisions about integrating new ideas into their practice.

“At all different levels”

Many pre-service teachers commented on the level of the modules in relation to the different levels of technology experience attained by pre-service teachers. There was significant reference to how the modules constituted only a review (or worse, a repeat) of material already covered elsewhere. In some cases, reference to repetition came about because students had already taken one or two ECMP classes as part of their elementary program. In other cases, the responses merely indicated that, in general, students are at different levels when it comes to technological knowledge. This notion of diverse technological knowledge is illustrated through the table of responses already presented in an earlier section of this report. [[Section 1: Demographic and General Information \(Select Questions\)](#)]

I think if you had taken ECMP 355 it was a lot of repetition. It's hard to incorporate something like this when we are at all different levels.

“Useful, but...”

Partially due to the theme of technology experience identified above, there was quite a variance in responses regarding the value of spending most of the second semester on webquests. According to some questionnaire responses, webquests were not useful enough to spend the entire semester on.

I used my webquest in my field as part of our unit. The kids enjoyed it. As for planning, I made the webquest in one weekend; therefore, too much time wasted in class going over it.

On the other hand, some responses indicated that it was the most useful skill they learned all semester. This reinforces not only the notion that students are “at all different levels” but also that students all have very different views on what is important for them to learn in order to integrate technology effectively into their classroom. Some students valued a session they had on the use of spreadsheets (in another class, not during the modules) more than the modules on webquests development.

We should have more instruction about powerpoint, excel, etc. so we can use them in the classroom. If you aren't sure how to use these things, a webquest is extremely confusing, especially if the instructor tends to rush through it.

“One that would complement”

Some responses indicated contradictions in beliefs about the practical aspects of technology integration. For instance, one pre-service teacher responded that she/he did not have enough

time to develop a webquest in the *best* way (that would complement the unit) so she/he would rather not develop and use one at all. Instead, she/he provided the students with useful websites, suggesting that students might get more out of going to the websites on their own rather than having a guided discovery of the websites through a (non-perfect) webquest approach. This seems to be a contradiction.

... webquests take a lot of time to develop and I didn't have that time to develop one that would complement my unit to the extent I would have liked. I did provide the students with links to energy websites that would further their knowledge.

An in-between space?

Since I took both ECMP 355 & 455 I felt that the modules were repetitive and useless for myself. As for other students, the information about webquests was overwhelming and created a lot of confusion.

All of the technology modules were essentially exactly what I learned in 355 & 455 so they were not of value to me. My suggestion would be to make technology modules relevant to all students or do not make them mandatory.

I did not find the modules to be extremely useful because I still do not know enough about a webquest to implement it into the classroom. The instructor did not go through the modules very clearly, therefore it was difficult to follow.

Is there an in-between space, between being bored by repetitive information and being overwhelmed by new information, where useful instruction in technology integration for pre-service teachers is possible? It appears, from this pre-service teacher's response, that the webquest modules were not useful for those having taken an ECMP class nor were they useful for those with little or no technology experience. It appears that the diversity in experience might actually suggest that there can be no "module for all" approach taken in pre-service teacher education. As in other parts of the questionnaire, it was suggested that pre-service teachers either take ECMP 355 or the modules, but not both. While it appears that ECMP 355 might replace the modules, the responses indicate that it is very doubtful the modules could replace ECMP 355. This interpretation is based on several comments about needing more time to work with the content of the modules.

Purpose gone astray?

I still do not really understand what a webquest is. According to my understanding of webquests, they are an assignment that is on the internet that could simply be printed off so that all of the students could participate instead of only a few because there are so few computers in the classroom.

I was able to use the webquest in the classroom. However, I had to use hard copy as there were not enough computers for the entire class to use them and actually go through the webquest.

There were several comments similar to the above which appeared to indicate that the purpose of the modules, and of learning about the integration of technology into the classroom in general, had gone astray. The general impression gleaned from responses such as these is that pre-service teachers' experiences thus far with technology indicate misunderstandings of the *meaning* of integration. Pre-service teachers indicate that in order for proper integration to occur there must be a fully equipped computer lab, consisting of a computer for every student. This "equitable" approach to classroom technology portrays an outdated view that technology can only be integrated if every student is doing the same thing at the same time. This view does not really surprise the iTED research team since the fully equipped, one-per-student computer lab is the environment in which these pre-service teachers experienced the module instruction. In many ways, the approach adopted for teaching and learning the ICT modules (same content for all, at the same time and pace) may actually have worked against one significant goal of this project: to understand the integration of technology as a tool for enhancing instruction and learning, not as an add-on or as an end in itself. The iTED research team expects this particular aspect of the project to improve significantly for the next cycle of pre-service teachers since the computer mini-labs, designed to be a natural part of a regular classroom environment, will be in place by Fall 2003.

Addressing the University-School Links

Several responses suggested that there is a need to explore and strengthen the link between the university teacher education programs and the reality of the current situation in schools. Through their questionnaire responses, pre-service teachers have given the general impression that the university's expectations are not feasible given the actual state of technology resources in the schools.

The webquest information was very useful and would be an excellent resource in the classroom. However, school situations must be kept in mind (i.e. 2 computers in each classroom, very slow, no computer lab).

Part of the situation alluded to in this quote may be due to the issues of the language and interpretation of what it means to integrate technology (discussed in the previous section), but it is believed that the issue of improving university and school links is one to be taken seriously.

When asked if the modules were beneficial in planning and implementing the integration of technology into their classroom, one pre-service teacher responded:

No, it was not possible since the students are not allowed to be on the internet and do not have access to enough computers.

This quote indicates either a misinterpretation (on the part of the pre-service teacher) of school policy or a misunderstanding (on the part of the university) of the school policies that are in place. If the reality is the latter of these two possibilities then the manner in which the ICT

modules, especially webquests, are constructed and taught needs to be seriously revisited. Such issues of school policies and regulations become significant in terms of communication between the university and schools with respect to teacher education programs.

Not to omit the positive feedback...

The intention of this synthesis of questionnaire information is not an attempt to paint a picture of failure for the i-TED projects' first year. On the contrary, the responses on many of the surveys indicate that the ICT modules (especially the webquests) were very beneficial to pre-service teachers and that they were successful in expanding pre-service teachers' knowledge and appreciation for the integration of technology into the classroom.

I believe that technology is used more and more everyday and will be a necessary skill. I found the modules that explained how we could involve our students were best (webquest).

Yes [the modules were of value] because I knew nothing about computers—making a webquest was very useful. It's something I will use later.

I planned an i-movie and incorporated it into my unit. I focused a lesson on it and actually included students at the end.

[The webquest] was the basis of technological integration during my block. It was an effective way to get computers into a science class—the students were so excited to be on the internet, usefully using the computers not just practicing typing.

In this report, the iTED team has understandably focused more attention on the comments related to improving the ICT modules with a vision to initiating changes in year two of this project's mandate.

Evaluation of Technology Modules—Winter 2003

Question 3

The following table summarizes the extent to which pre-service teachers agreed or disagreed with the statements listed in question 3 of the Winter 2003 questionnaire.

Statement...	Strongly Agree	Agree	Disagree	Strongly Disagree	NA	total
The modules should be worth marks in order for students to take them seriously	9	26	18	8	2	63
There should be enough time to complete all module requirements during class time (i.e., no homework assigned)	35	23	5	0	0	63
The modules should be made optional, not mandatory, for all students	17	20	32	3	1	63
ECMP 355 should be made mandatory for all students in the elementary program	42	15	5	0	1	63
Students who have taken (or are taking) ECMP 355 should be exempt from the modules	22	20	14	3	4	63
Students should have more input into the content of the modules	23	32	6	0	2	63
Students should be grouped according to levels of technology experience and knowledge for the design and completion of technology modules	20	22	14	4	3	63
The modules seemed a bit isolated— more connections should be made with methods classes	20	23	16	0	4	63
The module topics were too rushed	23	16	21	0	3	63

Appendix A

Use of and Attitudes Toward Information and Communication Technology STUDENT Self Evaluation Rubric (Sep/02)

Section 1: Demographic and General Information

- Please provide the following information about yourself.

1. Sex: Male Female

2. Age: Under 21 21-25 26-30 31-35 36-40
 41-45 46-50 51-55 over 55

3. What is your educational background with technology? (please check all that apply)
 - None or little experience with technology
 - Self taught
 - High-school computer courses
 - Community based technology courses
 - Technical institute (e.g., SIAST) technology courses
 - University Computer Science courses
 - "Computers in Education" type courses
 - Other (please specify)

4. How would you rate your computer skills?
 - Excellent Above average Average Below average Poor

5. How would you rate the importance of computer use by teachers in the classroom?
 - Computers are valuable tools, which can be used to improve the quality of teaching and learning in school.
 - Computers are a valuable tool, but have limited use in the classroom.
 - Computers are not helpful in improving teaching or learning in the educational setting and should not be used in school.
 - Other (please specify)

6. What kind of computer training have you received in the last five years? (Please check all that apply)
 - No training
 - Computer literacy (how to use a computer, how to manage files, etc.)
 - Computer software applications (e.g. MS Office, Corel Suite)
 - Training on how to use computers as an instructional tool.
 - Courses or sessions related to the impact of technology on society.
 - Other (please specify)

7. Do you own a computer? Yes No

Section 2: Attitudes Toward Information and Communication Technology (ICT)

- There are a series of statements below. Please respond to the statements by circling the number that most closely represents your opinion. There are no correct answers. Please provide a response to every statement.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I don't have any use for ICT on a day-to-day basis.	1	2	3	4	5
2	I am confident about my ability to do well in a task that requires me to use ICT.	1	2	3	4	5
3	Using ICT at my job or school will mean more work for me.	1	2	3	4	5
4	I do not think that ICT will be useful in increasing my effectiveness as a facilitator or instructor in the classroom	1	2	3	4	5
5	With the use of ICT, I can create instructional and learning materials to enhance my job performance.	1	2	3	4	5
6	I am not the type or person to do well with computers.	1	2	3	4	5
7	Anything that computers can be used for, I can do just as well some other way.	1	2	3	4	5
8	The thought of using computers frightens me.	1	2	3	4	5
9	Computers are confusing to me.	1	2	3	4	5
10	I could use computers to access rich information resources for work and school.	1	2	3	4	5
11	I do not feel threatened by the impact of ICT.	1	2	3	4	5
12	I am anxious about computers because I don't know what to do if something goes wrong.	1	2	3	4	5
13	ICT can be used to assist me in organizing my work.	1	2	3	4	5
14	I feel comfortable about my ability to work with computers.	1	2	3	4	5
15	Knowing how to use ICT is helpful in improving learning opportunities for students.	1	2	3	4	5

Section 2 adapted from "Development and Validation of Computer Self-efficacy Scale," by C. A. Murphy, D. Coover and S. V. Owen, 1989. *Educational and Psychological Measurement*, 49, p. 893.

Section 3: ICT Self-efficacy

- There are a series of statements below. Please respond to the statements by checking the number that most closely represents your abilities. Please provide a response to every statement.

	Level 1	Level 2	Level 3	Level 4
Basic Computer Use	<input type="checkbox"/> I do not use a computer.	<input type="checkbox"/> I use a computer to run a few specific, pre-loaded programs.	<input type="checkbox"/> I run two programs simultaneously and am comfortable switching between programs.	<input type="checkbox"/> I'm comfortable loading new programs onto my computer and learning how to use them on my own.
File Management	<input type="checkbox"/> I do not save any documents I create using the computer.	<input type="checkbox"/> I select, open and save documents on different drives.	<input type="checkbox"/> I create my own folders to keep files organized and understand the importance of a back-up system.	<input type="checkbox"/> I move files between folders and drives, and understand file sizes.
Word Processing	<input type="checkbox"/> I do not use a word processing program.	<input type="checkbox"/> I occasionally use a word processing program for simple documents. I generally find it easier to hand write most written work I do.	<input type="checkbox"/> I use a word processing program for nearly all my written work and communication. I can edit, spell check, and format documents.	<input type="checkbox"/> I use tables, word art, import graphics, and am familiar with the advanced features of my word processing program.
Spreadsheet	<input type="checkbox"/> I do not use a spreadsheet program.	<input type="checkbox"/> I understand the use of a spreadsheet and can create simple spreadsheets.	<input type="checkbox"/> I use spreadsheets for a variety of record-keeping tasks. I can create formulas, format cells, and choose charts to best represent my data.	<input type="checkbox"/> I feel comfortable using spreadsheets and understand how to use the advanced features of a spreadsheet such as pivot tables, macros, filters, etc.
Database	<input type="checkbox"/> I do not use a database.	<input type="checkbox"/> I understand the use of a database and can locate information in a pre-made database such as a library database search.	<input type="checkbox"/> I create simple databases to organize information I gather such as address information, registration for an event, etc.	<input type="checkbox"/> I am comfortable creating databases to organize and analyze data.

Graphics	<input type="checkbox"/> I do not use graphics.	<input type="checkbox"/> I find and place graphics into documents using clipart.	<input type="checkbox"/> I edit graphics by resizing, cropping, and recoloring.	<input type="checkbox"/> I am comfortable creating my own graphics using a drawing program, digital camera and scanner.
Email	<input type="checkbox"/> I have an email account but rarely use it.	<input type="checkbox"/> I send and receive email messages. I check my email at least once a week.	<input type="checkbox"/> I check my email on a daily basis. I maintain my default mail folders and create new folders to organize my messages.	<input type="checkbox"/> I use the advanced features of my email program. I manage my email address book, use a signature for appropriate messages, use rich text format, know how to manage a listserv membership, etc.
Desktop Publishing	I do not use a desktop publishing program.	I use templates or wizards to create a document in desktop publishing.	I modify templates to create documents. I can change colours, modify fonts, change graphics, etc.	I create original publications for a blank page and include layering techniques, custom graphics, tables, columns, etc.
Multimedia	I do not use multimedia programs.	I can use a multimedia program to create a simple presentation.	I can use more than one multimedia program to create a presentation	I feel comfortable creating interactive, presentations that incorporate sound, graphics, and video.
Internet Access	I do not use the Internet on a regular basis.	I use the internet to access a few sites. I can't remember any web site addresses and have to look them up.	I regularly access the Internet for information and often bookmark sites.	I am comfortable using the Internet and know how to manage my browser by setting my home page, checking search history, deleting cookies and temporary Internet files.

Search Engines	<input type="checkbox"/> I am unlikely to seek information using a search engine on the Internet.	<input type="checkbox"/> I conduct simple searches using one search engine I am familiar with.	<input type="checkbox"/> I use a variety of search strategies to locate information such as keywords, wildcards, Boolean operators, etc.	<input type="checkbox"/> I use a variety of search engines to locate information and understand the various types and limitations of each one.
Electronic Databases	I don't use electronic databases	I conduct simple searches using one familiar electronic database when I'm in the library.	I conduct searches using a variety of electronic databases from both home and the library.	I regularly use electronic databases to find information and feel comfortable using a variety of search options such as Boolean operators, limited searches, combined searches, etc.
Responsible Use/Ethics	I am not aware of any ethical issues surrounding the use of computers.	I know that some copyright restrictions apply to computer software and web sites.	I understand copyright restrictions that apply to computer software and web sites.	I model ethical use of all software and web sites and let others know my views on this issue.
Evergreen Curriculum	I do not access the Evergreen Curriculum site.	I have accessed the Evergreen Curriculum site to explore the contents.	I access the Evergreen Curriculum site to view and print information from the curriculum guides.	I am comfortable accessing the Evergreen Curriculum site and am familiar with the electronic databases, virtual resource centre, partnership sites, etc.

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Appendix B

Evaluation of Technology Modules For Students Fall 2002

1) What is your general perception of the value of the technology modules as presented? Did you find particular modules to be of more or less value? What changes might you suggest to the content, delivery, scope and/or sequence of the technology modules?

2) Did the integration of the technology modules have an effect on your perceptions of technology use in the classroom? Do you feel that this integration has affected your perceptions of teaching and learning styles?

3) What are some preliminary changes that you feel should be made to the use of these course modules? What changes do you feel should be made in regards to using technology in the education of pre-internship students.

