

Computers for Schools



Ordinateurs pour les écoles

let's talk
science

Wings of Discovery[®] Pilot Program Evaluation

Final Report June 2005



Background:

During 2004, Let's Talk Science and Computers for Schools identified a unique opportunity to work together to meet their missions and subsequently, a pilot project in London, Ontario was initiated to determine its feasibility. Our shared vision is, ultimately, for every licensed Canadian childcare centre, which is using *Wings of Discovery*[®] to be eligible to receive a computer from Computers for Schools. The computers would be used by early childhood educators for research and training purposes and by children for an introduction to technology and completion of *Wings of Discovery*[®] activities.

The Pilot Program:

The pilot program included five diverse childcare centres in London that had previously purchased at least one complete set of the *Wings of Discovery*[®] Early Years Program. Each centre in the pilot study was provided with a computer and printer and was required to implement a minimum of 2 *Wings of Discovery*[®] activities of their choice per week for 6-8 weeks.

The centres participating in the pilot program were:

| | |
|---|---------------|
| Chippewa of the Thames Day Care | Mount Brydges |
| Huron Heights Early Childhood Learning Centre | London |
| The Salvation Army Children's Village | London |
| Simply Kids Child Development and Learning Centre | London |
| Western Day Care Centre | London |

Initially the program was set to begin in October 2004 and end by January 2005. However, due to computer set up issues (discussed later in the report), staffing and building problems and the Christmas holiday, the pilot project did not begin in earnest until January 2005 and was completed in March 2005.

Purpose:

- to assess and explore the role a computer can play in supporting educators who are implementing the *Wings of Discovery*[®] program;
- to determine the technical needs of early years centres with regards to the maintenance and operation of a computer;
- to determine how a computer, in conjunction with the *Wings of Discovery*[®] program, can assist in the education of young children.

The assessment protocol:

Questionnaires and interviews provided the following information:

- Demographics of the targeted facilities and staff who worked there. One questionnaire concerned the childcare facility and was completed by the director or supervisor of the facility. The other concerned the ECE's (early childhood educators) in the pilot classrooms;
- The expectations and concerns of educators regarding the use of a computer in an early years' setting in general and in conjunction with the *Wings of Discovery*[®] program. This information was obtained from responses to questions posed to the ECE's as a group;
- The expectations and concerns of stakeholders from the partnering organizations regarding the use of a computer in an early years' setting in general and in conjunction with the *Wings of Discovery*[®] program. This information was obtained from questionnaires sent to appropriate staff at both Let's Talk Science (hereafter referred to as LTS) and Computers for Schools (hereafter referred to as CfS);

- The usefulness of the computer in gaining program support from Let's Talk Science – this was determined through bi-weekly personal interviews;
- Suggestions for computer-based activities that would enhance the *Wings of Discovery*[®] program - suggestions were gathered at the bi-weekly personal interviews;
- The frequency and purpose of computer use was determined through a log book and incident sheet, attached to each computer in the pilot program.

Relationship of the Project to the Let's Talk Science Mission:

Let's Talk Science strives to improve Science literacy through leadership, innovative educational programs, research and advocacy. We motivate and empower youth to use science, technology and engineering to develop critical skills, knowledge and attitudes needed to thrive in our world.

Integrating a computer with *Wings of Discovery*[®] is seen as a way to extend Let's Talk Science's reach, provide technical support and professional development to remote areas and assist in developing the computer skills of both educators and children. Placing a computer in a *Wings of Discovery*[®] early years' setting will help make the program even more "useable" by allowing educators immediate access to support and appropriate online activities that make (science) learning fun and interesting and will, subsequently, promote systemic change.

Expectations:

Both Computers for Schools (CfS) and Let's Talk Science (LTS) felt that including a computer with the *Wings of Discovery*[®] program would provide ECE with immediate access to online support, the ability to search and find information relevant to the program and to generate interest in the *Wings of Discovery*[®] program itself. ECE's also saw the addition of a computer to the environment as a way of increasing their own knowledge, helping with documentation, networking with ECE's in other centres and providing resources. ECE's felt that children would also benefit from the inclusion of a computer in the room through educational games and access to activities not normally available to them. It was anticipated that the lack of computer activities for children in the *Wings of Discovery*[®] program would affect the integration between the computer and *Wings of Discovery*[®] and that lack of computer training would be an issue.

Summary:

Although many of the expectations for the pilot by both stakeholders and participants were not realised to the extent hoped for, the inclusion of a computer in an early years' setting was seen as a benefit to both ECE's and children over the age of 2½ years. With the exception of ECE's in charge of young children (less than 2½ years), **all staff** found the addition of a computer to be beneficial to **themselves**. Staff used the computer to search for resources on the internet, type documents and to download and print digital photographs. In one instance an educator used the paint program to draw a map of the classroom instead of using the generic map in the *Wings of Discovery*[®] Community Project.

With the exception of ECE's in charge of young children (less than 2½ years), **all staff** found the addition of a computer to be beneficial to the **children**. Children were very interested and eager to use the computer and used it to play games, print pictures and do simple internet searches. Children were fascinated with seeing themselves, and their room on the computer screen. Using digital photographs of people and places, with which children are familiar, make activities much more relevant to them.

Supervisors of the childcare facilities found that the computer was intimidating to some staff but, overall, they considered it to be beneficial to both staff and children and worth the initial costs (\$50-\$140) incurred for re-wiring and cable installation.

The use of the computer by ECE's was lower than hoped for mainly due to a lack of familiarity with computers and computer programs. Although 74% of ECE's recorded using a computer at home, 58% responded that they were somewhat to not at all comfortable with computers. Two childcare facilities completed the "Computer Use Log" during the pilot with results as follows:

For November/December, 2004 (Huron Heights) the computer was used:

- by an adult only on 17 occasions for a total of 3 hours 55 minutes
- by an adult and child on 6 occasions for a total of 1 hour 5 minutes
- by children only on 4 occasions for a total of 2 hours 5 minutes
- and on 16 occasions by boys, 9 occasions by girls

For February 2005, (Salvation Army) the computer was used:

- by an adult only on 0 occasions
- by an adult and child on 10 occasions for a total of 4 hours 15 minutes
- by children only on 7 occasions for a total of 85 minutes
- and on 11 occasions by boys, 7 occasions by girls

It is interesting to note the use of the computer by more boys than girls although there did not seem to be any difference in choice of program used. This may be due to the type of programs made available to the children rather than conscious choice.

Children generally used the computer to play educational games such as "Freddi Fish 3", "Maya and Miguel", "Barney" and "Caillou Colouring Book". Some frustrations occurred as the computer was not initially equipped with external speakers for the games and the mouse in one centre was difficult to control because it kept sticking.

Some educators responded that they would make more use of the computer if they had some training in areas such as word processing and internet searching. Educators identified the need for training prior to the start, as well as during, the pilot program.

Technical support for the computer did not seem to be an issue although there was some confusion as to who to go to for problem solving – despite the contact information for CfS being prominently displayed on the cover of the log book attached to the computer. Some of the issues that did arise but were not reported to CfS by the centres (they were brought to the attention of CfS by the interviewer) were:

- speed of internet connection was too slow to be of any use (~ 15 minutes to download the LTS home page)
- absence of external speakers for game playing
- inappropriate sites reached on a search for children's activities

The last problem was directed to the agency normally used by the centre for computer problems. Their solution was to enable the content advisor which then restricted all but 2 web sites from being accessed, including the Let's Talk Science site, making online support and research unavailable. Although the computer is seen as a benefit to the educators and children, that it is fully functioning (i.e. is able to access web sites, has all necessary equipment) did not seem to have high priority to some centres. For them its main function, at this time, appeared to be playing games.

The need for training was also reflected in the lack of use of the discussion forum, as a means of communication, amongst ECE's and for support for *Wings of Discovery*[®] projects. Only 2 educators responded that they had tried to access the discussion group, others reported that they had "no time". Computers were only turned on when needed rather than left on and connected to the internet throughout the day. Perhaps, if they were always readily available, ECE's could make use of even five minutes of free time to post, or view, a suggestion on the discussion forum.

All respondents, ECE's as well as supervisors, felt that the inclusion of a computer with the *Wings of Discovery*[®] program would be of benefit to their centre. However, 61% of ECE and 40% of supervisors felt that the inclusion would also be somewhat intimidating. Despite this, ECE's believe that the *Wings of Discovery*[®] program should provide opportunities that encourage the interaction between children and computers provided they relate to the *Wings of Discovery*[®] activities. Some suggestions for activities are presented later in this report.

Prior to the start of the pilot, educators felt they would need ongoing support for *Wings of Discovery*[®] in the form of regular "check-ups" by LTS staff to ensure the program was being completed correctly, to answer questions and to provide suggestions. They also favoured support from staff, either face to face or by phone rather than through the discussion group. In reality, educators demonstrated little need for support for the *Wings of Discovery*[®] program. The activities were found to be enjoyable by both educators and children and the staff considered that the project guides contained sufficient material for implementation.

Recommendations:

The following recommendations are based on responses received through questionnaires and bi-weekly interviews with ECE's at the five centres.

→ Assist with initial set-up of computer equipment.

Data collection concerning the interaction between staff, computers and the *Wings of Discovery*[®] program began in earnest in the middle of January 2005. Computers were delivered to the childcare facilities in early November but lack of on-site technical staff resulted in considerable delay in the set up of the computer and internet connection.

Unlike schools, childcare facilities do not have computer support personnel on staff. Creating network connections falls to a general "handyman" or outside agency. This can result in a significant cost in terms of both time and money to the childcare agency. The cost to setup a computer in a centre can have a significant effect on the success of the program.

→ Provide the necessary equipment for this environment.

In order to run educational games the computer needs to be fast (the Pentium level was adequate) and both a mouse and external speakers are required.

→ Place computers in preschool and older rooms.

It was noted that the staff did not feel that computers were necessary or desirable for children under 2 1/2 years (toddlers). It is suggested that computers be placed in rooms of children aged 3 and older.

→ Place computers in heavily subsidized centres.

Demographic information indicated that subsidized children were less likely than non-subsidized children to have a computer at home. Placing a computer in centres with large numbers of subsidized children would provide computer access to those children allowing them to develop computer skills and help reduce the "digital divide".

→ **Provide training**

Training should range from very basic (accessing programs, file structures etc.) to more complex instruction for using discussion groups on the internet. Information also needs to be provided in print form so that it can be used as a reference. Some basic information can be found in the document "COMPUTER TERMS AND FAQs", created by the Early Childhood Community Development Centre (Niagara) and written by Cheryl McMillan & Lillian Mei. This document has been appended to this report.

→ **Provide extra equipment.**

Consideration should be given to the inclusion of a digital camera, and the appropriate software, with the computer when placing a computer in an early years' setting.

When asked what monthly fee the centre would pay for a maintenance plan or a plan that would allow them to access other equipment the response was \$0-5 per month. All centres have at least one computer for administrative purposes and so have already made some arrangements for technical support.

→ **Provide some form of protection from inappropriate web sites.**

Suggestions for online/computer activities for the Wings of Discovery® program.

The following suggestions were obtained through discussion with the ECE's and the interviewer during the bi-weekly interviews.

Match-up games

Children could relate an object to the letter that begins the name of the object (e.g., toaster → T, squid → S).

Children could select appropriate plants and animals for a specific environment (e.g. a desert landscape is shown, children could click on and drag a cactus or lizard onto the landscape).

Colouring pages

Provide outlines of environments (e.g., High/Low places, Warm/Cold places) and allow children to select the appropriate colours for the plants and animals that belong to that environment.

Simulations

Example: In the 'Right Roof' activity, children could select the roof and place it on the house.

Links

Provide links to other sites that contain appropriate activities.

Provide links, or suggestions, to sites that provide extensions to activities (e.g. link to London street map for mapping activities, police sites for community project).

Program

Put the *Wings of Discovery*® projects on our website and allow access by purchasers so that planning can be done at home.

Put black line masters and coloured pictures on CD to be printed by the centre.

Put the songs on CD.

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Demographics – Childcare facilities

Number of centres = 5

| Centre | Location | Type of facility |
|---|---------------|---------------------------------|
| Chippewa of the Thames Day Care | Mount Brydges | Multi-purpose building (rented) |
| Huron Heights Early Childhood Learning Centre | London | Purpose built facility (owned) |
| The Salvation Army Children's Village | London | One floor cottage (owned) |
| Simply Kids Child Development and Learning Centre | London | Purpose built facility (rented) |
| Western Day Care Centre | London | Purpose built facility (rented) |

| Centre | Years in operation | subsidized children (%) | # Full time teaching staff | # Part-time teaching staff |
|---|--------------------|-------------------------|----------------------------|----------------------------|
| Chippewa of the Thames Day Care | 30 | 100 | 4 | 0 |
| Huron Heights Early Childhood Learning Centre | 23 | 61 | 19 | 4 |
| The Salvation Army Children's Village | 35 | 87 | 12 | 0 |
| Simply Kids Child Development and Learning Centre | 3 | 98 | 18 | 0 |
| Western Day Care Centre | 33 | 9 | 9 | 0 |

| Centre | Number of existing computers available for | |
|---|--|----------------|
| | Staff use | Children's use |
| Chippewa of the Thames Day Care | 1 | 2 |
| Huron Heights Early Childhood Learning Centre | 1 | 0 |
| The Salvation Army Children's Village | 2 | 1 |
| Simply Kids Child Development and Learning Centre | 3 | 5 |
| Western Day Care Centre | 2 | 1 |

| Centre | % children in pre-school room using a computer at home | % total children subsidized |
|---|--|-----------------------------|
| Chippewa of the Thames Day Care | 33 | 100 |
| Huron Heights Early Childhood Learning Centre | 34 | 61 |
| The Salvation Army Children's Village | 32 | 87 |
| Simply Kids Child Development and Learning Centre | NR | 98 |
| Western Day Care Centre | Majority 70+ | 9 |

Demographics – Early Childhood Educators

Number of respondents = 19

| | | | |
|-------------------------------------|--------------------|-----------------------|-------------------|
| Gender | Female – 17 | Male - 2 | |
| Age | Under 30 years - 6 | 31- 40 years - 5 | Over 40 years - 8 |
| Highest level of education attained | College (ECE) - 18 | High school - 1 | |
| Do you use a computer at home? | Yes – 74% | No- 26% | |
| Comfort level with computers | Comfortable – 42% | Not comfortable – 58% | |

Responses for computer related questions

| Question | Responses | ECE response | Supervisor response |
|--|-----------------|--------------|---------------------|
| How appropriate do you feel that computers are for preschool children | Not appropriate | 47% (5/19) | 0 |
| | Appropriate | 73% (14/19) | 100% (5/5) |
| Do you feel that including a computer with the <i>Wings of Discovery</i> [®] program will be of benefit to your centre? | No | 0 | 0 |
| | Yes | 100% (19/19) | 100% (5/5) |
| Do you feel that including a computer with the <i>Wings of Discovery</i> [®] program will be intimidating to ECE's? | No | 37% (7/19) | 60% (3/5) |
| | Yes | 58% (11/19) | 40% (2/5) |
| | No response | 5% (1/19) | |

Pre-Pilot Questionnaire for ECE

(Answers shown here are as indicated on the questionnaires)

1. *How do you expect the presence of a computer to affect:*

- Your learning
 - enhance it;
 - getting information quicker;
 - helping me become familiar with websites that help ECE's;
 - will give me access to more information;
 - will help me do research i.e. children's health issues, unlimited ideas and exchange of information;
 - the discussion area will help implement children's learning;
 - access to a computer would encourage staff to further their own learning and attain more knowledge;
 - it will provide easier access to information;
 - I'm not sure it will;
 - gain more information i.e. internet, familiar with computer.
- Teaching style
 - promote small group interaction, enhance and compliment;
 - more resources to "pull" from, connecting with other teachers;
 - more confidence;
 - access to a wide range of programs, topics etc.;
 - to get more information so that I can offer more of a variety;
 - instead of big group have to adapt to small group format.
- Children's learning
 - children love computers;
 - they can see up to date pictures of items and they are interested right away;
 - the children learn mathematical, identifying, turn-taking and social skills through educational (computer) games;
 - I teach 2 year olds, I'm not sure it's age appropriate;
 - great for older toddlers and pre-school to help develop eye-hand coordination, motor development, reading readiness etc., makes learning fun;
 - having a computer in the classroom will allow the children to learn how to use a computer;
 - different ideas to try;
 - focus on children's interests;
 - new activities other than the "standards";
 - not sure the computer will affect me but I feel it may help the children;
 - learning through games, stories, promote literacy;
 - internet gives way for research.
- Day to day operations
 - provide another avenue for teaching on a daily basis;
 - can help with programs, special days, keeping records;
 - (it) can become part of a child's routine – sharing and taking turns;
 - it will give me ideas on how to better implement the (*Wings of Discovery*[®]) program. It also means at some point, during a pretty packed day, I need to find time to see what other ECE's have tried;
 - you can access such a wide variety of info on any subject that you or your children are interested in i.e. pets, zoo animals, people in other lands;
 - increase productivity.

2. *Do you perceive any barriers (e.g., financial, safety, logistical – lack of space, can't get internet) to the introduction of a computer in an ECE room? What might they be?*

- access to high speed internet;
- lack of training;
- space in our room is always a concern;
- one staff does not know much about computers;
- no concerns or barriers;

- with our age group (2 year olds) we are worried about safety;
- financial, lack of space;
- maybe a period of adjustment to familiarize yourself with a different computer, especially for those of us who have older model computers at home;
- none;
- the children have had access to a computer before so I don't think it will cause any challenges;
- making sure each child has an equal opportunity to partake in using/learning how to use the computer;
- a computer for 2 year old children seems a little inappropriate, it is a safety hazard and our children are not developmentally ready for a computer;
- lack of knowledge of staff on computers, what do we do with it to enhance our programs;
- financial;
- training.

3. *What issues or problems do you expect to arise from computer use?*

- monopolizing the computer;
- certain children focusing on the computer too much;
- not knowing how to help children on the computer due to lack of knowledge;
- for staff – lack of training;
- for children – trying to find appropriate materials for them;
- conflicts regarding children taking turns;
- proper care of the computer – turning off, keyboard, viruses, freezing programs, updating;
- finding time – we have to individually book time over lunch or before/after work as there are so many of us here;
- improper use of the computer e.g. shutting down wrong;
- everyone getting the time they need to use it;
- some children need to do work or learn visually;
- maybe the problem of computer freeze up;
- the computer may be too difficult and overwhelming for staff who do not have computer knowledge;
- teaching the teachers how to use the computers before they show the kids;
- kids may lose interest 'cos there's only one computer – finding time for everyone.

4. *What benefits do you expect to see through the introduction of a computer to the room?*

- access to resources;
- access information easily;
- digital photos;
- documentation;
- a good resource;
- teach myself and co-worker about internet sites for ECE's;
- to help children learn by use of the computer;
- no idea till we start;
- new knowledge gained for teachers through research;
- projects we can access that the children can do, also crafts, holiday celebration ideas (multi-cultural learning);
- learn how to operate a computer;
- children will develop computer skills;
- teaching aid- tool for learning new information;
- focussing increases for some children;
- eye-hand co-ordination;
- for teachers there are the benefits of all the resources available on the computer that we don't have day to day;
- children would benefit from the activities and resources we could pass on to them;
- could look up resources to help with certain units of study;
- enhance what we may be trying to teach children;
- help staff learn computer skills as well as children;
- becoming familiar or comfortable with computer, aid in future education, careers, long-term goals;
- parents could use the computer to further knowledge, interest in the topic at the day care;

5. *How do you expect the computer and the Wings of Discovery® program to work together?*
- further their knowledge and information applied in future;
 - I'm not sure, maybe we'll be able to obtain information from the internet to help us enhance what we are learning;
 - I expect that we would use the computer to ask questions, network and to develop "expansions" to activities;
 - "together" – the learning can be ongoing through use of the computer;
 - the discussion forum!! Can't wait to get in there;
 - give the opportunity to provide new activities for the children;
 - allow (the children) to learn more about the world of science;
 - very well – especially being able to access the net for ideas, questions etc.;
 - no idea till we start;
 - use it for the *Wings of Discovery®* website and communication through the internet;
 - I think it will be helpful for staff;
 - use the resources through the computer to enhance/expand the program;
 - don't know yet; book is amazing!
6. *What do you need "up front" to use the computer effectively?*
- basic computer training;
 - get the phone line in and get started;
 - I need to personally take some computer courses;
 - we need internet access and hook up;
 - proper computer table, area and supervision;
 - a little time, a little practice, some help from more knowledgeable staff;
 - basic computer skills (using keyboard, mouse);
 - networking – otherwise I think some people who are not comfortable with computers may need some tips and troubleshooting guide;
 - I guess I would need to table a "beginner's computer class" to effectively use the computer
 - for it to be hooked up;
 - easy access for staff;
 - knowledge;
 - training;
 - programs;
7. *What type of ongoing support do you think you will need for the computer?*
- trained person for further training or questions or problems;
 - I do not know;
 - technician's support if something goes wrong;
 - upgrading when needed;
 - staff with experience to be patient and supportive when I bug them constantly when I get into a jam using the computer;
 - tips and troubleshooting guide;
 - virus checks or firewall;
 - support from more expert computer "wizards";
 - probably repairs and boost;
 - someone for repairs;
 - a lot of direction on how to access the right information;
 - training for some educators;
 - how to use various programs.
8. *What type of ongoing support do you think you will need for the Wings of Discovery® program?*
- not too much support required for *Wings of Discovery®*;
 - regular checkups by LTS to see what we are doing, answer questions and give suggestions;
 - to be able to easily reach anyone with questions;
 - ideas of activities through website;
 - have a WOD representative meet with us to make sure we are completing the program correctly;
 - we will see when we are using the computer;

- perhaps a resource person checking in once and a while to see what progress is being made;
- update program, virus checks;
- the discussion forum, have any updates, indexed lists made available;
- if we had access to both the computer and the books it would be beneficial if we had planning time to successfully “work” the program (weekly team meetings);
- continued training for staff using the program. I felt that our second workshop was very rushed and am unsure where to begin;
- advice is a phone call away as well as help;
- (someone) to answer questions;
- access to someone in the program;
- confirm that (it) is being taught properly to children;

Bi-weekly Interview Questions for ECE's

1. *Did you use the computer during the past 2 weeks? For what purpose?*
 - typing documentation of what kids did;
 - kids use computers every day for educational games (Sammy Science, Magic School Bus);
 - accessing OPP website (community project), kids came in small groups to look at the site;
 - accessing aerial photos of neighbourhood, some kids could pick out their own house on the picture.
2. *Any problems with the computer? How were problems solved? How quickly?*
 - wrong modem in the computer needed dial up instead of broadband. Computer taken to CfS in London;
 - no sound for games, computers lacked external speakers. Interviewer picked up speakers at CfS London and installed them;
 - internet was too slow to be useful – LTS main page took 15-20 minutes to download. Computer had a dial up modem but so did the rest of the computers in the building and the download speed was OK; called in CfS but could not find the problem;
 - logged on to internet and got porn sites; situation dealt with by current technical supporter who set the content advisor – result, could not access internet sites at all.
3. *List any suggestions for kid or staff activities – using the computer - that would enhance the Wings of Discovery® program.*
 - searching for hints and tips on activities;
 - networking with others to find out how they modified activities;
 - have the books on line so teachers can plan at home;
 - matching games e.g. show picture of a household appliance, kids to click on the letter of the alphabet that starts the name of the appliance (toaster → T).
4. *List any comments, suggestions, and modifications for the Wings of Discovery® activities that have been completed.*
 - 'Road Rash' is too much for 2½ – 3 year olds;
 - Firefighting activity – trigger bottles too hard for little hands;
 - 'Paint' program was used to draw a classroom outline instead of using the generic map provided;
 - digital camera was used to take pictures of areas in the classroom to place on outline instead of using generic versions;
 - have no problem blending activities with emergent curriculum;
 - used a real street map and identified kid's homes with pins and string;
 - kids became bored with mapping;
 - kids made household sounds which were tape recorded. Kids guessed what made the sounds on playback;
 - used finger puppets to tell a story about fire safety;
 - practiced dialling 911;
 - walked to the local mall, took pictures of places as a segue into who is in the neighbourhood;
 - mapping activity – counted # steps from classroom door to every other door;
 - photographed places in the community and attached to large map;
 - attached artefacts (twigs, grass, stones) to the large map in appropriate places;
 - had kids describe their trip home (how many lights/stop signs etc.).
5. *Did you have any problems/issues with the activities? What were they?*
 - new teacher to emergent program – having difficulty incorporating activities;
 - no, there is sufficient material in the book;
 - no problems with wings activities.
6. *Did you seek out support? Where did you obtain support? Was the help to your satisfaction?*
 - asked another teacher.

Final Interview Questions – ECE's

Number of responses = 7 (3 Childcare Centres)

1. *Do you find a computer in the classroom a benefit to you? How?*
 - yes- convenient for searching the internet for ideas;
 - yes – can look up information (e.g. St. Patrick's Day), can print information;
 - yes – being able to access resources, type documentation, download and print pictures immediately
 - yes-to search for resources (games, pictures) on the internet;
 - computer was not in our classroom but our kids too young (toddlers), would not use the computer any more if it were in classroom.

2. *Do you think you would use the computer to a greater extent if you were trained in using some of its programs? What type of programs would be of most benefit to you?*
 - no – no need to use the computer for day to day planning;
 - no- not enough time;
 - yes – word processing, Outlook, Internet searching;
 - yes – word processing, I would like to make flash cards and worksheets;
 - No-not for this age group (toddlers).

3. *Do you find a computer in the classroom to be of benefit to the children? How?*
 - yes – (children) learn from the computer through educational games;
 - (children) can do searches;
 - yes children love it! They play educational games;
 - a little – used maps. Not used as much as I'd like because I am not computer literate, kids were really interested in the computer;
 - yes –kids play games;
 - yes – can find resources for the kids to use but they don't use the computer.

4. *What would make the computer of greater benefit to the children?*
 - new games;
 - better games;
 - make sure the equipment works properly – the mouse was sticking;
 - teacher more computer literate;
 - educational games;
 - not comfortable having more than 1 computer in the classroom;
 - fast, up to date computer able to run games;
 - having the computer in the actual classroom – ours was in a communal room;
 - nothing (toddlers).

5. *Do you think Wings of Discovery® program should provide opportunities that encourage the interaction of young children and computers? Why? What type of opportunities?*
 - yes though simulations e.g. in the 'right roof' activity, children could select the roof and place it on the house;
 - yes – related to Wings of Discovery® activities;
 - songs on CD;
 - would like a section on the website for kids to go to;
 - yes as a supplement or option;
 - yes if it is related to Wings of Discovery® activities;
 - CD song book would be great, interactive stuff for pre-school;

6. *Did you use the discussion forum? Was it easy to navigate? What information did you post/were looking for?*
 - no-no time;
 - no;
 - tried but got an error message, was going to post a site;

- no-no time;
- yes did access, easy to navigate, wanted to find adaptations for younger kids.

7. *Did you receive sufficient technical support for the computer? How could this support be improved?*

- didn't need any;
- yes;
- yes;
- yes.

End of Pilot Questionnaire – Directors/Supervisors

Number of responses = 2

1. *How did a computer in the classroom affect the classroom educators?*
 - intimidated some, more computer training necessary, insufficient time for evaluation;
 - staff found it helpful for ideas and research;
 - good, especially with internet access, we were able to use programs from the 'net.
2. *How did a computer in the classroom affect the children?*
 - wasn't in the classroom, was in the science room so limited access by children, not enough time used by children to evaluate;
 - they were able to work with a partner as we already had one computer (in the classroom).
3. *Please estimate, as closely as possible, the financial cost of providing a "free" computer for the classroom and describe them (e.g. internet subscription, re-wiring costs).*
 - approx. \$140 – cable, re-wiring, maintenance costs;
 - \$50 for set-up as we already had an internet provider.
4. *Do you feel that the benefits to your educators and children are worth the cost? Please explain why or why not.*
 - yes – until now our staff and children have not had access to the internet;
 - yes especially since we already had one in the classroom.
5. *How satisfied were you with the level of support received from Computers for Schools regarding maintenance and problem solving for the computer? (please circle your response)*

| | No response | Not at all satisfied | | | Very satisfied |
|--------------------|-------------|----------------------|----------|---|----------------|
| | | 1 | 2 | 3 | 4 |
| # responses | 1 | | 1 | | |

Comments: (This question seemed to create a lot of confusion among the directors/supervisors)

- Interviewer was prompt in her visits, some confusion in regards to reasons for visits;
- Never used the computer for sci-tech but they did tell us if we need they'll help us.

5. *How satisfied were you with the level of support received from Let's Talk Science regarding your issues and concerns with the Wings of Discovery[®] program? (please circle your response).*

| | No response | Not at all satisfied | | | Very satisfied |
|--------------------|-------------|----------------------|----------|----------|----------------|
| | | 1 | 2 | 3 | 4 |
| # responses | | | 1 | 1 | |

Comments:

- Initial training was good however no further contact. One call made was unanswered. Staff ended up asking interviewer (a computer person) for answer.
- Workshop was not very interesting – other than that quite satisfied

6. How much would you be willing to pay, **per month**, for membership to a plan that would provide your centre access to other free computers, printers, scanners etc. (please circle your response).

| | | | | | | | | | |
|--------------------|----------|--------|---------|---------|---------|---------|---------|---------|---------|
| | \$0 -5 | \$6-10 | \$11-15 | \$16-20 | \$21-25 | \$26-30 | \$31-35 | \$36-40 | \$41-45 |
| # responses | 2 | | | | | | | | |

7. How much would you be willing to pay, **per month**, for a maintenance plan to service all equipment received from the Computers for schools program?(please circle your response)

| | | | | | | | | | |
|--------------------|----------|--------|---------|---------|---------|---------|---------|---------|---------|
| | \$0 -5 | \$6-10 | \$11-15 | \$16-20 | \$21-25 | \$26-30 | \$31-35 | \$36-40 | \$41-45 |
| # responses | 2 | | | | | | | | |

8. If you were willing to subscribe to either of these plans, would you prefer to be billed
 Annually ___ Monthly ___

- would not matter
- we have our own technician (centre has many computers)

Pre-Pilot Questionnaire – Let’s Talk Science

1. *What is the overall goal for participating in this project?*

- to determine how provision of a computer would allow ECEs to more effectively implement *Wings of Discovery*[®];
- to determine the role a computer could play in providing online support to *Wings of Discovery*[®] users;
- my overall goal is to increase access for child care centres to computers (given the financial constraints experienced by most of them). By providing this access, as a benefit to using *Wings* resources, there should be an increased interest in the *Wings* program, itself;
- to discover if computer use in the classroom by both the educators and the children can enhance the *Wings of Discovery*[®] program;
- underlying goal -- to make educators comfortable using the computer to support *Wings of Discovery*[®] programming.

2. *How would you like to see computers and *Wings of Discovery*[®] program to work together?*

- ECE's could use the computer with children to do research on topics covered in *Wings of Discovery*[®] activities;
- ECE's could use the computer with children to do creative work (e.g., drawing, colouring) and use age-appropriate educational software;
- ECE's could access online support, including the discussion group and e-mail contact with LTS, and do additional research on topics covered in *Wings of Discovery*[®] as necessary;
- ECE's could print out black line masters for use with *Wings of Discovery*[®] activities;
- ECE's could use a digital camera to document children's learning;
- ECE's could use digital training materials (DVD, streaming online) for professional development;
- ECE's access program support and training online (i.e. ask questions about implementation; download teaching resources such as BLMs, receive regular newsletters from LTS, online chats with other *Wings* educators etc);
- use the computer with children in a way that complements the program (e.g. conduct research, do simple graphing, maybe down the road we can provide interactive *Wings* activities online or an interactive child's corner);
- ideally, it would be nice to have some interactive *Wings of Discovery*[®] specific computer activities to enhance the concepts learned in the projects but realistically, I liked to see the computer used by the educators and children together to explore concepts further (Internet research);
- I'd also like to see educators use the computer to access *Wings of Discovery*[®] support, share ideas, adaptations and anecdotes, etc..

3. *How do you expect the computer and *Wings of Discovery*[®] program to work together at this time?*

- ECE's should use the computer to access online support for *Wings of Discovery*[®] (i.e., e-mails to LTS staff, online discussion group);
- ECE's would research information on topics covered in *Wings of Discovery*[®] using web sites listed in the Educator Resources section of the projects;
- teachers email questions to program developers; conduct research online with or without the children; simple graphing and charting as it relates to *Wings* activities;
- since the pilot requests that participants only do two activities per week for the Community project, ultimate goals may be hard to reach; therefore, I would like to see educators achieve a basic comfort level in using the computer so they can progress to using it as a tool in implementing future *Wings of Discovery*[®] projects.

4. *What issues do you feel might arise concerning computer use?*

- user comfort with computers, e-mail and discussion groups;
- technical issues with computer (hardware or software);
- technical issues due to lack of familiarity with software; hardware problems; possible confusion about logging their use of the computer; other ways they may want to use the computer (i.e. administrative);

- many of the participants have stated that they are not comfortable using computers so the main issue may be how to provide efficient technical support without us having to provide a basic computer training course – if they don't already know how to surf the Net or use email, we have not provided them any training to do so (hopefully, they will contact CfS for this type of support).

5. *What benefits do you feel might arise from computer use?*

- instant access to *Wings of Discovery*[®] product support;
- online access to vast array of real-world imagery to allow ECE's to extend learning for children;
- improve access to Wings training and support; access to a Wings network of educators; increase comfort of educators with using Internet for research; using computers with preschool children (many have access at home already); educators may use the computers to increase their efficiency in class (i.e. scheduling);
- having educators and children gain basic computer skills will help them deal with the fast paced technological world of today;
- it could also give children who might not have access to a home computer the opportunity to learn the basics of operating a computer;
- the support system for *Wings of Discovery*[®] may be used more frequently which would in turn enhance Wings usage.

6. *What issues, related to computer use, do you feel might arise concerning the implementation of the Wings of Discovery[®] program?*

- none that I can think of;
- lack of activities to do directly with the children (program was designed originally to NOT require a computer);
- that there may not be enough training in the basic use of a computer so we could not expect participants to go beyond the basics;
- at this point, our projects have not been written to encourage more computer usage (i.e., there are no direct ideas, instructions or activities written for computer usage) so someone with little computer knowledge may not use the computer as it could be (i.e., graphing).

7. *What type of ongoing support do you think will be needed for the Wings of Discovery[®] program?*

- specific questions relating to activity implementation;
- providing updates to published material;
- hopefully nothing onerous - after the initial training and orientation to the program, we'll likely need to provide answers to their questions about individual activities;
- given that most ECE's don't have a science background, regular interaction through an online newsletter or discussion groups may keep them interested in expanding their use of the program;
- the initial *Wings of Discovery*[®] training for the CfS pilot has been very brief - this was mostly due to time restraints during scheduled staff meetings (the time centres requested training) - in general, each centre received training based on their needs but, for the most part, the training was a brief introduction to *Wings of Discovery*[®], including it's components, how an activity looks and very basic planning – it is very conceivable that as educators begin implementing *Wings of Discovery*[®], they will have questions that will need to be addressed – it is hoped that this can be dealt with electronically (via email, our website or the discussion group) or by phone calls.

8. *What concerns do you have about the use of computers by young children?*

- children spend plenty of time in front of video screens in later life – why encourage them now?;
- introducing children to computers too early could come at the expense of real-world experiences that we advocate;
- access to inappropriate web sites;
- too much time working on computers – children need various forms of stimulation and don't want to encourage disproportionate amount of time doing this;

- access to developmentally appropriate software and equipment (e.g. child friendly mouse, keyboard etc);
- my concern is how they are used and how much time they are using them;
- computers can be a great teaching tool if used to enhance classroom learning (i.e., to research a topic further) but they can not take away from the value of play in the early years – too much time on a computer may be a detriment to learning in the early years.

9. *How does the addition of a computer to the Wings of Discovery® program fit with the Let's Talk Science mission and vision statement?*

- computers are an integral part of modern life, and showing children how computers can be used is introducing them to technology and its impact on society;
- using a computer for professional development purposes and building a community of learners significantly extends LTS' reach and helps us to ensure that *Wings of Discovery®* is used and not just purchased, thereby making a systemic impact;
- computer technology and the Internet has changed the face of our society and can be outstanding educational tools if used appropriately;
- LTS is committed to empowering people through Science education – providing them with access to affordable technology, along with training and high quality programming / support to ensure that it can be implemented appropriately with young children fits perfectly with our mission;
- giving educators and young children the opportunity to gain basic computer skills should “prepare them (young people) for our rapidly changing world”;
- using the computer as an educational tool to research science concepts based on *Wings of Discovery®* should help to “improve Science literacy”;

Pre-Pilot Questionnaire – Computers for Schools - Ontario

1. *What is your overall goal for participating in this project?*
 - to break into a new area of clients to serve with National potential; determine the need for technical support with information on what specific areas;
 - currently, CFSO supports K-12 schools and non-profits for learning; by partnering with LTS, CFSO is able to support preschool children with technology-assisted learning;
 - since CFSO is connected in every province and territory, there is an opportunity to expand to support these young children across Canada.

2. *What role do you expect Computers for Schools to play during this pilot?*
 - CFSO will be donating the computer hardware and loaning the test centres the Windows operating system for the pilot; CFSO will also be configuring the Let's Talk Science computers to meet the needs of all test sites. In addition to the above, Computers for Schools – Ontario will be providing technical support in terms of setup and troubleshooting of all donated computer hardware.
 - CFSO has provided the hardware and associated tools/assistance to launch the pilots.

3. *What role do you expect Let's Talk Science to play in this pilot?*
 - to administer the test program as it relates to the *Wings of Discovery*® program and to track information as to the effectiveness of using computers in conjunction with *Wings of Discovery*® program;
 - In addition to providing the obvious software/training to the child care facilities, we would like LTS to play the lead in sending out a News Release to gain publicity.

4. *How do you expect a computer to be used in a childcare facility?*
 - under the supervision of the test site, the computers can be expected to be used as a learning and research tool along with the *Wings of Discovery*® curriculum as well as gaining familiarity with Office software;
 - the computer is also expected to be used as a teaching aid for the day care centre for all supervisors wishing to upgrade their computer skills;
 - I would expect LTS and the child care facility to determine the best use of the computer. My thoughts are that it be used for learning.

5. *What concerns do you have about the use of computers by young children?*
 - without the close supervision of the test centre, children may be able to access websites not suitable for their viewing; also, the concern of various Viruses' and Trojan horse attacks as well a script Virus' and spyware;
 - as with any activity that children participate in, I would expect that proper supervision/training be provided.

6. *What issues do you feel might arise concerning computer use (e.g. software, hardware problems, parental disapproval)?*
 - no major issues should arise concerning the use of computers at the test sites as long as close supervision is available; Computers for Schools – Ontario does not provide user manuals to the software installed on the computers, therefore, small frustrations may arise in the unfamiliarity of the software;
 - if those involved are properly introduced and educated on all aspects of this new partnership, then I do not anticipate there being any concerns about computer use.

7. *What benefits do you expect the computer to bring to the educators, centre and children?*
- the direct benefits to the children will be from the exposure to the computer itself and as a learning aid to the curriculum being taught to them; the impact to the centre and the educators will be the increased familiarity and comfort in using the computer as a teaching tool as well as other creative initiatives brought on by the individual test centres;
 - it is important to provide computer training for children as early as possible to build a foundation for learning that can be added to as they progress through the education system; in my opinion, the educators will have the tools to provide exposure and training on a valuable subject to children; I hope the children will be excited about science/computers and they will look forward to learning more as they go to school.

8. *What type and frequency of support do you think will be needed by participating educators and centres for this project?*
- Computers for Schools – Ontario does not foresee any frequent technical support from the test centres as the duration of the pilot is fairly small; the majority of the support will be expected in the initial stages of setup when all the components are implemented into each centre; support may be needed for some of the software programs as they may new to the end users;
 - when the CFSO computers leave our facilities, they are operational and require little technical support to set up other than loading software; as you know, we are available for technical support and if there are any hardware difficulties, then a replacement computer will be provided; we anticipate that LTS will provide the software training.

9. *Do you (CfS) have any plans to offer technical support when this pilot project ends?*
- based on the results of this pilot project CFSO will be looking at various models of technical support to help various clients;
 - the needs of the centers will be determined from the results of the pilot – CFSO will ensure that a plan is in place to address these needs.

10. *How much would you expect a child care facility to pay, **per month**, for membership to a plan that would provide access to other free computers, printers etc. (please circle your response).*

\$0 -5 \$6-10 \$11-15 \$16-20 \$21-25 \$26-30 \$26-30 \$31-35 \$36-40 \$36-40 \$41-45

- CFSO will put a program into place that matches the needs of the child care facilities once we have a clearer understanding of the requirements, scope, etc.

11. *How much would you expect a child care facility to pay, **per month**, for a maintenance plan to service all equipment received from the Computers For Schools program? (please circle your response)*

\$0 -5 \$6-10 \$11-15 \$16-20 \$21-25 \$26-30 \$26-30 \$31-35 \$36-40 \$36-40 \$41-45

- CFSO will put a program into place that matches the needs of the child care facilities once we have a clearer understanding of the requirements, scope, etc.