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The Design, Development and Evaluation

of a Computer Software Workshop for Volunteers

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A Thesis

In

The Department

Of

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ABSTRACT

The Design, Development and Evaluation

of a Computer Software Workshop for Volunteers

Heather McGuire

Integrating computers into the classroom has been an important issue for educators for many years, however the process of integrating computers is lengthy and complex. Many phases exist to achieving the complete integration of technology into pedagogy, the first of which is acquirement of basic computer literacy skills by teachers and others who interact with students. In order to promote computer use in schools, volunteers who show an interest in acquiring skills in various software applications, or related equipment can be trained as an initial step towards the increased awareness and use of computers in the schools. In order to begin this process at an urban elementary school in Quebec, 6 parent volunteers were given a 3-hour Introduction to Hyperstudio workshop. The training materials were instructionally designed using Gagne's theory of instruction. The workshop was instructor-led, and the participants were provided with a participant manual to help guide the learning process. Upon completion of the workshop the learners completed a participant survey, as well, interviews were conducted with several of the participants.

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CHAPTER I

INTRODUCTION

The integration of technology into the classroom has been a topic of great interest to educators and researchers alike for the past several decades. Schools have gone through cycles of introducing various types of technologies such as radios, instructional television and overhead projectors in an attempt to revolutionize the field of education. It was predicted that teachers would be replaced by radios and that television would reduce the need for textbooks (Cuban, 1989). With the introduction of computers into the classroom, once again it was predicted that this technology would solve educational problems that are prevalent in schools today. However, arguably, major gains attributable to the infusion of computers in the schools have not yet been seen (Morrison, Lowther & DeMeulle, 1999). Why is a tool that permeates every facet of industry and personal lives so difficult to integrate into the classroom? The answer to this question is multifaceted, but perhaps an important consideration is due to educators' conceptions of how technology should be used, compared with how it is actually being used.

A great deal of research has been done on the use of computers in the schools (Hannafin & Savenye, 1993; Heywood & Norman, 1987; McMahon, 1990). This literature suggests that there have been significant difficulties experienced in the process of integrating computers into the classroom.

Teachers play a vital role in the implementation of the change process. "The central role of the teacher in causing change in the classroom is obvious but often ignored by those seeking change" (LaFrenze & Friedman, 1989). In addition, Sandholtz, Ringstaff and Dwyer (1997) believe "teachers are the gateway to change and that ultimately they will determine whether technology will significantly influence education." Given this important role in the change process, it is surprising to note however, that teachers are not typically provided with the necessary computer skills to utilize technology for classroom instruction (Schmidt, Sasser, Linduska, Murphy & Grether, 1998). Moreover, pre-service teachers do not receive the necessary computer training they require. A study carried out by the Office of Technology Assessment in 1995 found that less than 50% of the respondents reported having computer courses available for their teachers. Research indicates that teachers do not have enough knowledge of computer applications or the principles behind their use (Hammond, 1994). In addition, "inaccessibility as well as unavailability of equipment, resources, personnel, and training for teachers contributes to impeding teachers' efforts at adopting the use of new technologies (Fawson & Smellie, 1990). Fear is often stated as a reason for teacher resistance to implementing the use of computers (Hannafin & Savenye, 1993). Fear of loosing control in the classroom, as well as fear of the computer in general, contributes to teacher reluctance to using the computers in the classroom. Teachers also feel there is a lack of support from administrators, which increases the likelihood of resistance to change (Fawson & Smellie, 1990; Heywood & Norman, 1987). Further, teachers feel they do not

have sufficient time for implementing computer activities in the classroom (Hardy, 1998).

Even though the process of integrating the use of computers into the classroom is typically fraught with difficulty, the benefits of computer use cannot be ignored. In a meta-analysis conducted by Khalili and Shashaani (1991), 36 independent studies indicated that the use of computer applications have a positive effect on the academic achievement of students from elementary school to college. As well, students continue to enjoy using computers, even after extended use, because they have an appreciation of the benefits offered by the technology (Parr, 1998). Moreover, "There is a richness about the kind of result-producing knowledge that students pick up during their work with computers that provides a potentially fruitful soil for academic structures" (Weir, 1989).

As the literature indicates, there are many reasons why integrating computers into the classrooms has not been as successful as anticipated, even though students benefit from their use. However, further research indicates that there are additional factors that contribute to the lack of technology integration in the schools. Morrison, Lowther and DeMeulle (1999) suggest that this lack of technological integration can be attributed to the way technology is used, as well as the types of technology available. Typically computers are used to deliver instruction in the classroom. Drill and practice software is the most common type of software, which emphasizes rote memorization. Reform in the schools however is promoting a constructivist approach that emphasizes student-centered learning, which is not typically supported by the traditional approach to

the use of computers. Morrison, Lowther and DeMeulle (1999) further state that: "Technology and a constructivist approach to education do not, however, need to be at odds with one another. If we change our view of computers from merely a means to deliver instruction to one of a tool to solve problems, then the reform movement can influence the use of technology, and technology can influence the reform of education." This type of change, however, cannot come from the technology itself, but rather from an educational vision that crosses disciplinary boundaries, taking knowledge from many sources. Moreover, the emphasis of this change should be on in-service teachers and the programs that assist in informing their practice (Willis, 1997).

In order to progress toward an environment that promotes a constructivist learning approach, the role of the educator must be modified. No longer is the teacher a provider of information to relatively passive learners (Fawson & Smellie, 1990). It is important to realize that "computer literacy is not taught specifically but that the technology is introduced in a curricular framework" (Heck & Wallace, 1997). Teachers must be aware that they are being asked to change the culture of the classroom and modify the typical pattern of control in order to permit group activities and peer teaching and learning (Weir, 1989). By shifting the role of the teacher, the learner may take an increased level of responsibility for learning outcomes. The technology available in the classroom enables both learners and teachers to accomplish their individual goals. The teacher, as such, becomes a visionary of learning and must shift their mindset from lecturer to facilitator of the learning process (Hardy, 1998).

This process of learning technology and incorporating it into the classroom can take a great deal of time. According to Becker (1994), it can take teachers more than five years to become proficient computer users. During this process of learning and change, teachers can have specific and individualistic concerns about the changes, as well as their involvement in the process (Hord, Rutherford, Huling-Austin and Hall, 1987). Table 1 below, taken from Hord et al. indicates the six stages of concern.

Table 1

Concerns-based approach model in relation to technology integration

	Stages of Concern	Expression of Concern
0.	Awareness	I know very little about computers and do not use them either personally or professionally, even though I see technology looming on the horizon. I am somewhat technophobic.
1.	Informational	I am a novice. I lack the knowledge and skill to make use of technology at home or in the classroom. I am concerned about learning more about the potential uses of technology in the classroom.
2.	Personal	I am beginning to make use of technology in my professional work, but am concerned about how using it will affect me personally as an educator.
3.	Management	I am concerned about the amount of time needed to learn and keep up with the educational applications of technology. I seem to be spending all of my time learning about technology and preparing materials for technology integration.
4.	Consequence	I use technology, but am concerned about the effect my use of technology is having and should be having on student learning. How can I refine my approach to have more impact on student learning?
5.	Collaboration	Occasionally I can help a colleague with a hardware/software issue. I am concerned about how to relate what I am doing to what others are

		doing in their use of technology in the classroom.
6.	Refocusing	I am comfortable with making routine professional use of technology and I have some ideas that would work even better.

Teachers must go through these stages of concern as they move towards increased computer use in the classroom. These concerns can be influenced by several factors including the type of assistance they receive as they implement change. According to Hardy (1998), teachers should be provided with on-site technology support, someone who is accessible to the teachers throughout the day (Hardy, 1998).

Given the difficulties encountered in obtaining computer skills, such as insufficient time and minimal support, it might be beneficial to investigate an alternate method of infusing computer knowledge into the schools. Some schools have a large group of volunteers who are able to contribute their time and expertise to various areas in the schools. Heck and Wallace (1999) state: "Implementing learner outcomes in technology should not require additional teaching staff. However, implementation does require staff who feel comfortable with technology and/or open to change and learning about the role of technology in teaching." The topic of recruiting parent volunteers who show an interest in the area of technology, and training them in the area of computer software, is a field for which there is very little current literature available. However, it is the author's feeling that volunteers with sufficient computer training can help the teachers in steps 1, 2 and 3 of the Concerns-Based

Approach Model in Relation to Technology Integration (Table 1). Heck and

Wallace (1999) suggest in order to implement this type of change, individuals

with computer knowledge and skills would be advantageous to include in an

organization going through a process of change. Parent volunteers are one

group of individuals who are often very knowledgeable of computer applications

due to their employment in industry. These parents can participate in computer

lab sessions and provide the necessary knowledge to the students. Fawson and

Smellie (1990) recommend the use of parent volunteers to provide expertise and

support when implementing technology into the schools. Heck and Wallace

(1999) also propose that classroom aides with the necessary skills can assist

teachers in the classroom or labs. The following is a list of tasks that can be

performed by volunteers:

- Help students explore and search on the Internet.

- Help with students' projects.

- Compile and transmit data for the teacher, students or class.

- Find and suggest web sites and computer projects/activities.

- Help to set up an instructional environment and make sure that the required equipment is available and working.

- Locate resources, equipment, etc. that is needed for an assignment.

- Construct and manage web pages.

- Help to teach students technology skills.

- Help to train staff in technology skills.

Volunteers with a work history in industry have seen how technology is used to solve problems and enhance working conditions. They would be capable of providing assistance to students in many of the areas noted above. By using volunteers in the computer lab, the teacher and the students are able to benefit from a resource person when learning the necessary computer software, and can proceed with the next steps of integrating technology into the classroom.

The challenge faced by many schools is to determine how to move from their current model of computer use (in this project it is the use of educational CD-ROMs) to one where the use of technology is more fully integrated into the curriculum (Schnackenberg, 1999). In Quebec, Canada the Education Minister recently stated: "When I visit schools, I sometimes see computers that are still in boxes because the schools are waiting for people to help use them" (Wilton, 2000).

In order to begin the process of integrating technology into the classroom, computer knowledge must be infused into the schools. As a means of assisting with this process, volunteers can be trained to use the necessary technology. This can be done through the use of instructionally designed materials to ensure familiarity with the technology available. It is important to use materials that have been created using instructional design procedures as this will increase learning (Richey, 1986). Furthermore, instruction that considers students, teachers, materials and the learning environment in the development process is crucial to successful learning (Dick & Carey, 1996).

Smith and Ragan (2000) discuss several advantages of the use of the systematic instructional design process. First, it encourages advocacy of the learner. The learner is basically the focus of instruction. Designers typically spend a great deal of effort during the first phase of a project trying to determine learner characteristics. It is suggested that information concerning learners take precedence over other factors, including content. Second, appealing, effective and efficient instruction needs to be supported. The process of design focuses on effective instruction, due mainly to the instructional analysis process, which assists in eliminating any unnecessary content. In addition, by using the process of formative evaluation, the designer is provided with the opportunity to revise the instruction in order to make it more effective and appealing. Third, the coordination among designers, developers, and those who will implement the instruction is provided. The systematic process permits communication among all individuals involved in the process. Documentation such as objectives and task analysis assists in all aspects of the design process. Fourth, the diffusion, dissemination and adoption of the material are facilitated. Due to the fact the products of systematic instructional design are physical products, they can be copied, distributed and used in the field. In addition, the systematic design of instruction supports development for alternate delivery systems. The front-end analysis and consideration of instructional strategies are excellent starting points for projects that may want to use different delivery systems other than the one originally developed. Finally, the congruence among objectives, activities and assessment is facilitated. The use of a systematic

approach to the design of instruction helps to ensure that what is being taught is in fact what is required in order for learners to achieve stated learning goals, and that evaluation will be accurate.

Figure 1 illustrates the relationship between the three phases of the instructional design process and how they are sequenced as delineated by Smith and Ragan (2000). It is important to note that some steps of a certain phase many occur concurrently. In addition, the revision of instruction is included in the evaluation process. This is because it takes place after some learners have tried out the instruction. However revisions can also be done in either the strategy or analysis phase to ensure the final product is effective instructional material. The three phases of the design process are:

1. Analysis of the learning environment. During this first phase, designers of instruction attempt to learn as much as possible about the learning environment, and the learners.

2. Selecting the appropriate instructional strategy. At this stage the designers determine how instructional materials will be presented, what learning activities are required, as well as the sequencing of the instruction. In addition, the type of media to be used is selected.

3. Evaluation of the instructional materials. When evaluation materials are being developed, the designers need to know if any changes concerning content or sequencing of information are required. This is necessary in order to improve instruction and to facilitate use by the learner.

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┌─────────────────────────────────────────────────────┐
│ Analysis                                             │
│                                                      │
│   ┌─────────────────────┐                            │
│   │ Learning Task       │──────┐                     │
│   └─────────────────────┘      │                     │
│                                │                     │
│   ┌─────────────────────┐      │                     │
│   │ Learners            │──────┤                     │
│   └─────────────────────┘      │                     │
│                                ▼                     │
│   ┌─────────────────────┐  ┌──────────────────┐      │
│   │ Learning environment│──│ Write Test Items │      │
│   └─────────────────────┘  └──────────────────┘      │
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┌─────────────────────────────────────────────────────┐
│ Strategy                                             │
│                        ┌──────────────────────────┐  │
│                        │ Determine:               │  │
│                        │  • Organizational        │  │
│                        │    Strategies            │  │
│                        │  • Delivery Strategies   │  │
│                        │  • Management Strategies │  │
│                        └──────────────────────────┘  │
│                                    ▼                 │
│                        ┌──────────────────────────┐  │
│                        │ Write and Produce        │  │
│                        │ Instruction              │  │
│                        └──────────────────────────┘  │
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┌─────────────────────────────────────────────────────┐
│ Evaluation              ┌──────────────────────────┐ │
│                         │ Conduct                  │ │
│                         │ Formative Evaluation     │ │
│                         └──────────────────────────┘ │
│                              ┌──────────────────────┐│
│                              │ Revise Instruction   ││
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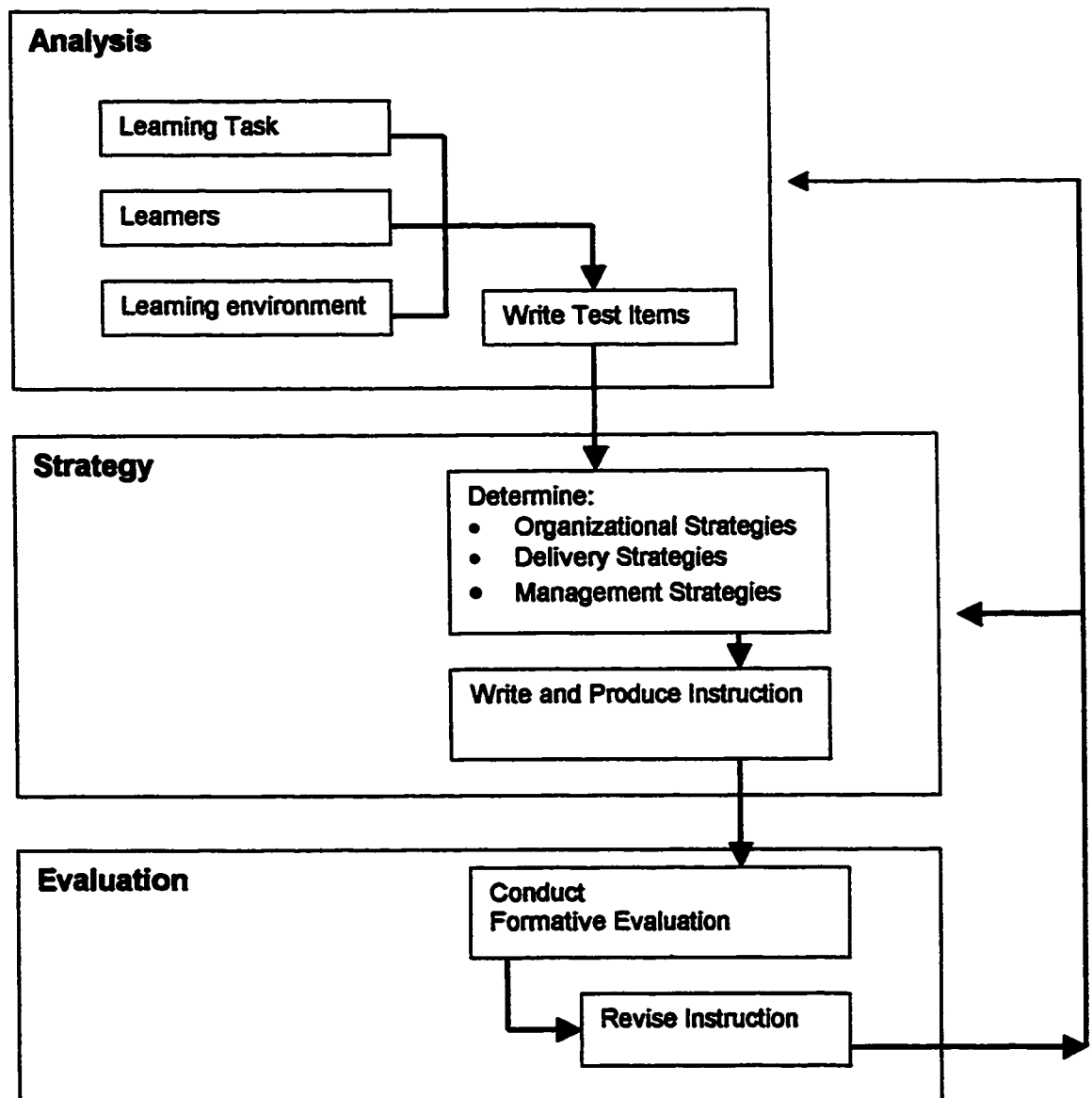
Figure 1. Instructional Design Process Model (Smith & Ragan, 2000)

In order to develop materials with the appropriate instructional strategy, the strategy must incorporate a particular learning theory into the system in order to improve effectiveness (Bednar, Cunningham, Duffy & Perry, 1991). A well-known instructional theory is one developed by Gagne (1985). Gagne adopted information processing theory as a foundation for his theory, the

conditions of learning, which includes both internal events (such as previously encoded information) and external events (such as methods of elaboration to facilitate encoding). The events of instruction make reference to procedures designed to facilitate specific processes (such as encoding, retention, retrieval, etc.) that are thought to take place during learning (Driscoll, 1994).

In Gagne's conditions of learning, different learning outcomes are grouped into five categories, which are: intellectual skills, cognitive strategies, verbal information, attitudes and motor skills. Learning goals are categorized into the type of outcome they represent. Within this framework Gagne developed nine instructional events. Through an instructional event, the learner is able to experience the internal process of learning. These internal processes vary depending on the type of learning. Table 2 below from Gagne (1985) indicates an instructional event followed by the internal process.

Table 2

Gagne's instructional events

Instructional Event	Internal Process
1. Gaining attention	Reception
2. Informing learners of the objective	Expectancy
3. Stimulating recall of prior learning	Retrieval to working memory
4. Presenting the stimulus	Selective perception
5. Providing "learner guidance"	Semantic encoding
6. Eliciting performance	Responding

7. Providing feedback	Reinforcement
8. Assessing performance	Retrieval and reinforcement
9. Enhancing retention and transfer	Retrieval and generalization

It is suggested that the lessons should follow the sequence of events as indicated, however in certain circumstances this may not be plausible, given the learning environment.

The purpose of the current project was to train six computer lab volunteers at Windermere Elementary School in Montreal, Quebec. The training materials were instructionally designed using Gagne's theory of instruction. The volunteers participated in a workshop designed to teach HyperStudio software, which is a program that is widely used across the Lester B. Pearson School Board. Due to the fact that this software is geared toward children in an educational setting, many of the volunteers are not familiar with the program. Upon completion of the training session, participants were asked to complete a participant survey concerning the workshop and any comments they may have had regarding their learning experience. Interviews were also held, as well as the assessment of participant learning gains.

CHAPTER II

METHOD

<u>Participants</u>

Participants in the workshop were six parent volunteers whose children attend an urban elementary school in Montreal, Quebec. The backgrounds of the volunteers are varied. Several have very limited computer knowledge, but are keen to learn in order to help their children with computer work in the home. Other volunteers are familiar with Microsoft applications such as Word, and educational games such as MathBlaster, as they have been used previously in the school. None of the volunteers are familiar with Hyperstudio, as it has never been used in the school. The educational backgrounds of the volunteers are also varied. Some participants have obtained university degrees while others have completed high school.

<u>Materials</u>

The workshop was developed as an introduction to Hyperstudio. This software is classified as an authoring tool, which permits the user to integrate various elements such as text, graphics, video, sound and navigation. Through the use of these multimedia elements, the story or material being presented can be enhanced by the visual representation of the elements. Hyperstudio can be used for several purposes such as reports, presentations, projects, tutorials and games.

The Introduction to Hyperstudio Course was instructor-led, and as such, an instructor guide was developed. In addition, the course was paper-based so each participant received a participant guide for the workshop. The guide included brief explanations of the objectives for the course and practice items. The course contained three modules and the duration of the workshop was approximately three hours. Module one was 45 minutes, module two was one hour and 15 minutes, and module three was one hour.

The overall instructional goal of the course was for the learner to create a stack (project) that contained at least 3 cards, using Hyperstudio software. The stack should have included a background, a clip art, a button and an object. The three modules contain a total of 12 instructional objectives and 30 practice items. Module one has four objectives and 13 practice exercises, module two has seven objectives and 13 practice exercises, and module three has one instructional objective and eight practice exercises. Table 3 lists the instructional objectives, and number of practice items for each module in the workshop.

Table 3

Introduction to Hyperstudio course objectives

Objectives	Number of Practice Items
Module 1	
1. Participants will create a stack.	1
2. Participants will open and save a stack.	
	1
3. Participants will use the following options on the tool palette to create objects in the stack:	
• Object tool,	
• Paint tool,	2
• Line tool,	2
• Text tool, and	2
• Eraser tool.	2
	2
4. Participants will add a card to stack.	1
Module 2	
5. Participants will create a background to the stack.	2
6. Participants will use the color palette to change colors in the stack.	2
7. Participants will add a border to the stack.	2
8. Participants will add clip art to the stack.	3
9. Participants will add buttons to the stack.	2
10. Participants will add a sound for button change to the stack.	1
11. Participants will print the stack.	1

Objectives	Number of Practice Items
Module 3	
12.The participants will create their own 3-card stack, entitled "All about Me" utilizing the steps from the previous modules.	8

The instructor provided feedback on the various practice items by viewing the work of the participant and indicating areas requiring modification. The participants then had to revise their work.

In module three, the participants created a project entitled "All About Me". They were required to prepare a minimum of three cards that included information about where they live, something they like, and a drawing of their choice. The participants used the tools they learned from the workshop to complete the stack.

In the instructor guide, an exercise modeled after the practice items in module three was included. This exercise was used as an evaluation for the workshop to measure participant achievement.

Procedures

The instructional design process typically involves several phases, the first one being a needs analysis (Gagne & Briggs, 1979). This phase is carried out in order to determine whether instruction should be developed. Smith and Ragan (2000) developed six questions to evaluate if a needs assessment is necessary. They are:

- Are there learning goals that are not being met by students?

- Is the existing instruction being delivered efficiently?

- Is instruction unappealing and therefore resulting in poor motivation and interest of the learners?

- Is instruction for unreached learning goals currently being presented?

- Should new learning objectives be added to the curriculum?

- Has there been a change in the composition of the learner population?

In the context of this project there is no instruction currently being delivered due to the fact that personnel with the necessary knowledge and skills have not been available. In addition, there is a change in the learner population on a yearly basis due to the changes in enrollment and volunteer availability. Finally, there has been a change in the school in terms of how the computers should be used. The current focus is to use the computers as a tool rather than for drill and practice. Therefore, in order to accomplish the objectives of creating an environment where technology is integrated into the curriculum, volunteers are required to know the Hyperstudio software. If the answers to the six questions posited by Smith and Ragan (2000) are "no," then a needs analysis is not needed prior to designing instruction. Therefore, in this particular context it is not necessary to conduct an in-depth needs analysis. However, in order to determine the target population's level of computer literacy, a learner analysis questionnaire was developed. (See Appendix A). Each potential participant in the workshop was evaluated to ascertain if they have basic computer skills such

as mouse manipulation, tool selection and basic navigation ability. The skills to be taught were developed based on the results obtained from the analysis.

After completing the development of both the instructor (Appendix B) and participant guides (Appendix C), they were reviewed by a Hyperstudio subject matter expert (SME), who is also an instructional design expert. Studies have shown that the effectiveness of learning materials can be improved if they are reviewed by an expert (Davidove and Reiser, 1991).

An advantage of using a SME is that the information obtained is from a different perspective than that of a learner. This is due to the fact that an expert possesses knowledge and experience that a learner would not have. Since expert reviews come from a source other than a learner, they are useful complements to other types of evaluation data (Tessmer, 1993).

Another benefit to using an expert is that they can sometimes be inexpensive, if suitable experts are readily available for little or not cost. For module-length instruction, an expert can review the information within several hours, and the wealth of information that can be obtained within this time frame can greatly enhance the instruction. In the field of public education this advantage is something that should be considered and taken advantage of because of the limited amount of funds typically available in this environment.

An expert, as described by Bruning, Schraw and Ronning (1999) has seven characteristics of expert performance. The first characteristic is that an expert typically excels only in their domain in which they are familiar. This expertise develops slowly, is very labor intensive and is limited to a particular

body of knowledge. The second characteristic is that they organize information more efficiently than do novices. Experts are able to chunk information into larger recognizable sections than a novice would be capable of doing. The third characteristic is that experts can process information faster than novices because of the fact that they can represent problems more efficiently. The fourth characteristic of an expert is that they can hold more information in short-term and long-term memory. This ability permits experts' thoughts and actions to be highly automated, resulting in accomplishing higher-order cognitive tasks. Experts can also represent problems at a deeper level, which is the fifth characteristic. Typically experts will focus their attention on the underlying details rather than on superficial surface features. This skill allows experts to represent the task at hand differently than novices. The sixth characteristic is that experts spend more time than beginners analyzing the problem, particularly at the beginning of the process. Finally, experts are better monitors of their performance, within their domain of expertise, than beginners.

The proposed workshop took place in a computer lab that contains 16 PC's, each between one and three years old. Each participant was assigned to a computer and provided with participant guide.

The instructor led the workshop. Explanations for each objective were provided and demonstrated by the instructor. After the instructor demonstration of a task, participants were then given the opportunity to practice the same task, referring to the instructions in their guides. Prior to beginning another demonstration, the instructor ensured the learners could correctly perform the

skills in the current exercise. An example of two practice exercises for the workshop are provided below:

Please complete the following:

1.   Use the line tool draw to a square.

2.   Use the eraser tool to erase two lines in the square.

At the end of module three, the instructor distributed the evaluation exercise to the participants (Appendix D). As this exercise was meant to ascertain participant learning gains, the instructor did not do a presentation prior to it and only gave the participants instructions for completing it on their own. Upon completion of the exercise, the instructor asked each participant to notify her. The instructor then used a criterion sheet (Appendix E) to assess the level of accuracy with which the participant completed the task. A sample of items on the criterion sheet is below:

Rate each participant's project using the checklist below:

1.   Does the stack contain buttons on each page? (2 points)

2.   Does the stack contain a clip art? (2 points)

3.   Does each card contain text? (2 points)

At the end of the workshop, each participant was asked to immediately complete and return a survey to obtain feedback concerning length, difficulty and overall impressions of the workshop. In addition, within three weeks of completion of the course, several participants participated in an interview to further assess attitudes toward the workshop. Two sample items from the survey are below:

Please circle your response to each item:

1. Did you enjoy the course?   Yes   Somewhat   No

2. Will you feel confident in helping   Yes   Somewhat   No
    children with this software?

Criterion Measures

The final evaluation exercise included 10 criteria that were evaluated by

the instructor by reviewing the participant's work. The instructor verified and

scored the stacks by referring to a checklist of the items to be completed by the

learner. As each item on the grading criterion is worth two points, the maximum

possible score was 20.

The attitude survey (Appendix F), which was completed at the end of the

lesson, was intended to measure the participant's reaction to the training in

terms of overall impressions, length and difficulty of the course. The survey

contained 10 Likert-type questions rated on a three-choice scale (Yes,

Somewhat, and No). Some items were reversed on the survey in order to

prevent participants from circling the first response to each question. In

addition, there was one open-ended item that asked if there were any other

comments or feedback the learner would like to share.

Data Analysis

The scores on the final evaluation exercise were tabulated per objective, as well as in a cumulative score for each participant. Mean scores per objective and overall for the exercise were then be calculated.

Data from the participant survey was sorted by a most positive (3) to least positive (1) basis. A mean and standard deviation for each question were determined. The data from the interview questions (Appendix G) was ranked by similarity of responses, as well as frequency of occurrence.

CHAPTER III
RESULTS

Achievement

There were six participants in the Introduction to Hyperstudio Workshop.
The data obtained from the final assignment checklist was used to ascertain if
the learners were able to complete the desired objectives correctly. The results
of the achievement data are shown in Table 4.

Table 4

Final Assignment: Score, Percentage and Means

Objective	Total Points	Overall Percentage	Mean
1. Does the stack contain a background?	12	100	2.00
2. Do 2 cards contain buttons?	12	100	2.00
3. Does each card contain text?	10	83	1.67
4. Does the stack contain objects?	12	100	2.00
5. Does the stack contain a clip art?	12	100	2.00
6. Does 1 card contain a border?	10	83	1.67
7. Are there 2 colors of text?	12	100	2.00
8. Do the buttons contain sound?	12	100	2.00
9. Was the stack printed?	12	100	2.00
10. Was the stack saved?	12	100	2.00
Overall Mean			1.93

Note: Each objective is worth 2 points.

The data indicates that eight of the ten objectives were done correctly by all participants resulting in a score of 100. These items included using a background, using buttons with sound on two cards, using objects, using clip art, using two colors of text, as well as printing and saving the stack. There were two objectives that were not completed correctly by one of the six participants. One of the objectives encompassed including a border on one of the cards, and the other objective required the learner to include text on all of the cards. For these two objectives, the resulting overall score was 83 points.

In terms of individual scores, one participant obtained a total of 16 out of 20 points and the remainder of the participants obtained 20 out of 20 points. The individual participant scores are indicated in Table 5.

Table 5

Individual Participant Scores: Points and Percentage

Participant	Points	Percentage
1	20	100%
2	20	100%
3	20	100%
4	16	80%
5	20	100%
6	20	100%
Overall Mean	19.33	96.67%

<u>Participant Surveys</u>

The participant surveys indicate attitudes and reactions to the training. All

participants completed a survey, and the results are shown in Table 6.

Table 6

<u>Reaction Scores: Percentages, Means and Standard Deviations</u>

Question	Most Positive	Somewhat Positive	Least Positive	Mean	Standard Deviation
1. I enjoyed the course.	100%	0%	0%	3.0	0
2. How difficult was the course?	100%	0%	0%	3.0	0
3. How did you find the length?	100%	0%	0%	3.0	0
4. How were the directions for the activities?	100%	0%	0%	3.0	0
5a. How did you find the practice exercises? (Difficulty)	100%	0%	0%	3.0	0
5b. How did you find the practice exercises? (Quantity)	100%	0%	0%	3.0	0
6. Would you like to receive instruction in this form again?	83%	17%	0%	2.8	.41
7. Do you like to use computers?	100%	0%	0%	3.0	0
8. Will you feel confident in helping children with this software?	83%	17%	0%	2.8	.41

| 9. Overall, how would you rank this course? | 100% | 0% | 0% | 3.0 | 0 |

Note: All items measured on a three-point scale from 3 (most positive) to 1 (least positive), thus higher scores are more favorable.

The results show that all participants enjoyed the course and provided the most positive ranking to the course enjoyment question. As well, all the participants felt the level of difficulty and the length were about right. In addition, 100% of the participants indicated the directions for the activities were very clear and the practice exercises were about right in terms of difficulty and quantity.

The question relating to receiving instruction in this form again resulted in five of the participants indicating they would like to receive instruction in this form again, while one person selected "maybe."

All the participants indicated that they like to use computers. However when asked if they felt confident in helping children with this software, one person selected "somewhat," and the remainder felt confident. The overall ranking of this course received the most positive ranking (good) from all six participants.

The final question was an open-ended item that asked the participants to provide any comments or suggestions they might have concerning the course. The data obtained from this question is shown in Table 7.

Table 7

Participant Surveys: Replies to Open-ended Question

Replies

1. Excellent! You did a great job of introducing the task and then having the students apply it.

2. Find out if there is a way to edit text. This will be a big issue with the students given their spelling ability.

3. The course was easy to follow and the pace of instruction was excellent. Well done!

The replies to the open-ended question were very positive. Participants who completed this question stated that the instruction was easy to follow and well paced. One item of concern was the ability to edit text. The participant felt that it would be beneficial to investigate the best way to edit text, as this will be an important concern for the students.

Participant Interviews

Results from the interviews conducted with three of the participants in the Introduction to Hyperstudio Workshop are categorized and reported in Table 8. According to these participants, two of them found the workshop to be challenging enough, while one of the participants would have liked the workshop to be more challenging. The question regarding any skill requiring further explanation resulted in two of the participants stating that everything was well covered, and one participant would have liked more information on correcting text mistakes. All three participants did not find any aspects of the workshop to

be really difficult. In terms of feeling challenged or bored, two of the

participants felt challenged, while one of the participants was somewhere in

between challenged and bored. When asked if they felt learning the software

like this is better than learning things week-by-week, all three participants felt it

was beneficial to have attended the workshop, so they would know in advance

what the program is about. In addition, they felt it would be harder to explain

the program to the children without previous exposure to the software, since this

software is more advanced than other programs currently being used.

Table 8

Responses to Participant Interviews

Question	Replies
1. Would you have liked the workshop to be more challenging?	Was challenging enough (2) Could be more challenging (1)
2. Was there any area (skill) that you would have wanted more explanation?	No, everything covered well (2) Correcting text mistakes (1)
3. Were there any parts that you found really difficult?	No (3)
4. Did you feel challenged or bored?	Challenged (2) Somewhere in between (1)
5. Do you feel learning the software like this is better than learning things week-by-week (like KidPix)?	Prefer workshop, so you know a little ahead. Would be harder to explain to kids without previous exposure (3)

CHAPTER IV

DISCUSSION

The purpose of this project was to conduct a Hyperstudio workshop for volunteers in a public school. This was done in order to assist in the initial stages of increasing computer awareness within the school environment. Assuming the volunteers were successful in completing the objectives of the course, the next step would then be to support the children and the teachers during their learning process of the software.

The achievement results indicate that the participants were successful in achieving the required objectives, resulting in an overall mean score of 1.93 out of a possible 2.0. This high result may be attributable to the fact that the individuals who participated in the workshop were those volunteers who were more knowledgeable about Hyperstudio. The majority of the participants in the workshop work with the older grades, and as such have more skills and confidence in their computer abilities than some of the volunteers who assist the children in the younger grades. This heightened level of confidence and ability is due to the fact that generally only people who feel they know as much, if not more than the children, will work in the computer lab. As older children tend to know more concepts and ideas (overall and about computers), the volunteers for these grades consequently do as well.

The individual scores for all but one of the participants was 100%. The participant who received an 80% is a volunteer who works with the Kindergarten

children and has limited computer skills. She took more time to complete the assignment and when she realized she was the only person not finished, she stopped working and shut down the program. Although she did not complete all the objectives, everything she did complete was correct. Given more time or the attendance of other learners at her competency level in the workshop, she may have completed all the objectives correctly.

The results of the participant attitude surveys were very positive. Seven of the nine Likert-type questions received the most positive response. The workshop was given in the computer lab in the school, which is an environment where the volunteers would feel comfortable. In addition, the participants knew one another, which provided a comfortable atmosphere for asking questions and general discussion. An LCD projector was used so that the volunteers could refer to the screen, as well as to their participant guides for additional guidance. Furthermore, the course was completed during the morning school hours so parents did not have to rush to drop off or pick up their children.

One participant provided a somewhat positive reply to the question concerning receiving instruction in this format again. This may be a result of finding the pace too fast or too slow, although this point was not elaborated on further in the open-ended question.

The question regarding feeling confident in helping the children with this software received a somewhat positive response from one participant. This reply may have come from the learner who did not accomplish all the objectives, and as such may have felt that more training would be beneficial. However, since

this participant is working with the younger students, it is not imperative that she be completely familiar with Hyperstudio at this time.

The overall course ranking received the most positive reply from all the participants. This indicates that the participants had a positive experience learning the Hyperstudio software.

There were three participants who replied to the open-ended question that asked the participants to provide any comments or suggestions they might have concerning the course. Two of the comments were very positive, however one area of concern was the ability to edit text. The method of adding text that was demonstrated in the workshop was with the 'text tool', which cannot be edited once it has been added to the screen. This caused some concern, as children may need to edit their work. A better way to add text has been determined to be the use of a 'text field', which will permit changes to text at any time. This method of text editing will be explained to the volunteers during future computer lab time, as well as to the children. Also, in subsequent versions of the current workshop, the text field will be used to demonstrate text editing rather than the text tool.

There were three participants who took part in a follow-up face-to-face interview. One of the participants felt that the workshop could have been more challenging. This participant did not feel challenged or bored, but somewhere in between. As well, this particular participant is the most knowledgeable volunteer working in the computer lab, so although he felt the course cold have been more challenging; the other respondents felt the course was challenging enough. Once

again, the subject of editing text was mentioned. This difficulty will be remedied by demonstrating an improved method of inserting text to the volunteers and the children in the future.

The final interview question was intended to determine if the participants found it beneficial to spend time learning new software, compared to the current method of being provided with a brief explanation of the lesson to be taught to the children prior to the beginning of the computer lesson. All three participants found it worthwhile to attend the workshop so they would know in advance what is being taught in classes. As well, they felt is would help them explain various aspects of a software program to the children.

Limitations of the Project

There are many phases in the undertaking of integrating technology into the classroom, and the complete process can be a lengthy and difficult one. This project did not address the complete process, but addressed the first stages of concern for the teacher. It therefore cannot be generalized to discuss complete technology integration into pedagogy (and indeed, does not attempt to do so), but rather draws implications on the initial steps of such a process.

Another limitation of this project is the fact that the people participating in the session were volunteers. It is difficult to insist that they attend the workshop, unlike in a corporate setting where employees can be instructed to attend training sessions. It was difficult to know for certain how many volunteers would be attending the workshop due to the their individual levels of commitment. Furthermore, on the day the Hyperstudio workshop took place

some parents could not attend because they had other obligations. Also, one parent had a sick child at home and could not participate.

Recommendations

After volunteers have been trained, the next step would then be to have them work with the children for several months. At that time it would be beneficial to once again assess the value and retention of the skills and knowledge obtained from the current workshop. This evaluation could investigate if the volunteers had received sufficient training to help the students with their projects and determine if a second, more advanced course would be required.

It is also recommended that training for the software programs used in the school be geared to volunteers at the appropriate grade level, especially if the volunteers' computer abilities are limited. Therefore, if a volunteer were working with the younger grades s/he would participate in a workshop that teaches software to be used in those particular grades. This would enable volunteers to learn the more basic programs first and progress to more difficult applications as they move from the younger grades to the older grades.

Finally it is recommended that volunteers be supplied with a weekly activity sheet that provides activities for the children to do while they are learning a software program. This sheet would contain instructions for an activity as well as tips for successfully completing the objectives.

Overall, the Introduction to Hyperstudio Workshop was successful in training volunteers on how to use the basic components of the software. In

addition, the volunteers felt that attending the workshop was a positive experience that will help them in their task of working in the computer lab with the children.

Implications for Research and Practice

The task of integrating computers continues to be an important issue for educators due to the benefits derived by the students. However, the process of technology integration has not been successful due to a variety of factors including ineffective teacher training and little technical support. At this point in time it may be necessary to consider other alternatives to achieve the goal of increased awareness and knowledge of effective computer use in the schools.

This project, although limited in scope, demonstrates the fact that volunteers can be successfully trained to use software and that they are willing to spend the required time to learn educational software. The results of this study indicate that it is beneficial for schools to recruit and train volunteers who show an interest in acquiring skills in various software applications, or related equipment, using instructionally designed material. Although this is a singular case study, and as such the results may not be statistically generalizable to a broader context, the results suggest that institutions attempting to implement the first stages of technology integration (i.e. computer literacy skills) into their learning environments can benefit from implementing instructionally designed professional development materials that focus on the hands-on, objectives-based practice of the use of technological skills.

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Appendix A

Learner Analysis – Checklist

Name:_____

Skill	Yes	Somewhat	No
1. Can manipulate mouse.			
2. Knows how to access program from desktop (double click on mouse).			
3. Knows what an Icon is.			
4. Knows what a menubar is.			
5. Knows how to navigate menubar.			
6. Knows how to select an item on a tool bar.			
7. Knows how to scroll down a page or window.			
8. Knows how to click and drag.			
9. Has saved a document on a PC.			
10. Has used drawing-type software.			
11. Knows word processing.			
12. Has used Hyperstudio before.			

Appendix B

Instructor Guide

Introduction to Hyperstudio Workshop

Instructor Guide

Table of Contents

Course: **Introduction to Hyperstudio**

Instructor: Parent Volunteer

Instructional goal: For the learner to create a stack that contains at least 3 cards. The stack will contain a background, a clip art, a button and an object.

Course length: 3 hours

Equipment needed: Computers
                          Projector (beneficial)

Materials needed: Instructor Guide
                          Participant Guide

Location: Computer lab in the school

Synopsis of course

The workshop is an introduction to Hyperstudio. This software is classified as an authoring tool, which permits the user to integrate various elements such as text, graphics, video, sound and navigation. Through the use of these multimedia elements, the story or material being presented can be enhanced by the visual representation of the elements. The course will be instructor led, and as such an instructor guide is provided, in addition to a participant guide. The course contains 3 modules. The first module covers creating, opening and saving a stack, as well as using the tool palette to create objects. The second module covers adding a background, changing colors, adding borders, clip art, buttons with sound as well as printing the stack. In the final module, the participant will create their own 3-card stack that utilizes information learned from the previous modules.

Lesson Organization Strategy Plan

Introduction

1. Gain Attention

The instructor will welcome the participants to the Hyperstudio Workshop and briefly explain how the course will run. The course will be done in such a way that the instructor will explain the task (skill), and then the learners will be given the opportunity practice what they have been taught.

2. Establish Purpose

The instructor will inform the learners that upon completion of the course they will be able to develop their own Hyperstudio project that contains three stacks (screens), which is similar to the Kidpix slideshow. They will learn how to use various tools as well as the transition capability. Through their knowledge of this program, they will be able to help the children at the school to learn the software.

3. Arouse Interest and Motivation

The instructor will explain that Hyperstudio is an exciting program that is classified as an authoring tool, which permits the user to integrate various elements such as text, graphics, video and sound. Hyperstudio can be used for several purposes, such as reports, presentations, projects and games.

4. Preview Lesson

In the first of the three modules they will earn how to create, open and save a stack. As well as using the tool palette to create objects in the stack. Module 2 they will learn about background, borders, clip art, buttons and the color palette. In Module 3, the learners will create their own 3-card stack that incorporates the skills they have just learned.

Body

5. Recall relevant Prior Knowledge

The instructor will have the learners recall learning other types of computer applications (Word, Excel, etc.), and ask them to recall that learning experience.

6. Process Information and Examples

The instructor will explain each skill, and the learners will be given the opportunity to practice these skills

7. Focus Attention

The instructor will circulate throughout the class and restate what should be done if learners are having difficulty completing the practice items. The instructor will also remind the learner of the steps, or mention key words to help the participant remain focused.

8. Employ Learning Strategies

It will be suggested to the learners to make notes in their participant guide for any areas that they had difficulties and to add explanations that would help them to remember the information in the future. As well, help them to see any similarities in this program, and other software that they may be familiar with.

9. Practice

The learners will proceed with the practice items in the participant guide. If any problems are encountered, the instructor will respond to the questions, and continue to guide the participant through the lesson.

10. Evaluate Feedback

Due to the fact that the participant's responses may differ, the instructor must make an effort to review the work of the students by circulating around the class through the lesson.

Conclusion

11. Summarize and Review

The instructor will restate how to access the tool palette and mention two of the items (i.e. object tool and text tool). As well, the instructor will restate how to add a border, add clip art and how to add the buttons (these are the basic items to know in order to complete Module 3).

12. Transfer learning

The learners will be asked to create their own 3-card stack, entitled "All about me" utilizing the steps from the previous modules.

13. Remotivate and close

The instructor will advise the participants that they have completed the lesson and done a good job. Now they will be prepared to work with the children at the school when the children will be introduced to the Hyperstudio program within the next several weeks.

14. Assess Performance

The learners will be asked to complete the performance instrument.

15. Evaluate Feedback

The instructor will circulate with a checklist of items in order to evaluate the performance of the learners.

Lesson Plan

Introduction

Desired learning outcomes	Student Activity
1. Becomes aware lesson has begun.	Observes instructor.
2. Knows what will be covered during lesson.	Observes instructor.
3. Understands importance of lesson.	Observes instructor.

Instructor Activity

Welcome students to the Hyperstudio workshop and explain how the course will be given. The instructor will explain the skill, step-by-step, and then the learners will be given the opportunity to practice what they have been taught.

Inform the students that upon completion of the course they will be able to develop their own Hyperstudio project that contains 3 cards (or screens), which is similar to the Kidpix slideshow feature (some of the participants will be familiar with this software). The course is divided into 3 modules. In the first module the participant will learn how to create, open, save a stack as well as use the tool palette to create objects in the stack. The second module covers the background, clip art, color palette, borders and buttons. In the final module the participants will create their own 3-card stack, where they can apply the information obtained from the previous modules.

Explain that Hyperstudio is an exciting program that is classified as an authoring tool, which permits the user to integrate various elements such as text, graphics, video and sound. This program can be used for several purposes, such as reports, presentations, projects and games. With their knowledge of this software they will be able to help the children with their projects.

Body

Desired learning outcomes	Student Activity
1. Recalls learning other types of software.	Recalls information.
2. Understand skill being explained.	Listens and works at computer.

Instructor Activity

Have students recall learning other types of computer applications, such as word processing or excel, and ask them to recall that learning experience.

Present the information for the 3 Modules described on the following pages.

Module 1

Opening a Stack

1. Access Hyperstudio by double clicking on the **Hyperstudio icon.** The icon looks like a green book with a white hand.

2. Click on new stack icon.

3. Question will be asked: **Do you want to leave the home stack?** Click on yes.

4. Question will be asked: **Do you want to create a new stack called "untitled"?** Click on ok.

There should now be a blank card with the name **"untitled"** at the top of the screen. A stack has now been created.

We will now explore different part of the program. The first thing we will look at is the tool palette.

Using the Tool Palette

1. From the **menubar**, click on tools and hold down the mouse and drag the tool palette along the left-hand side of the screen.

2. Click on the text tool "T". (It is on the bottom left-hand side of the palette). This is the tool that lets you add text to your screen.

3. When you move your mouse, you will notice it is a straight line with a little line on the top and bottom.

4. Click once on the screen where you want the text to start.

   Type in your name and address. You must hit the enter key to move down a line. The computer does not do it automatically.

5. Click on another location on the screen. Double click on the "T" in the **tool palette**. This brings up a window that lets you change the size, color and style of the text. Choose "Schoolboy", size 18, and any color. Click ok.

   Now type in a sentence or two.

We will now explore the drawing tools on the tool palette.

Using the Drawing Tools

There are 3 tools for drawing, and they are the rectangle, oval and round rectangle shapes. We will explore these options now.

1. Click on the rectangle tool. (Tool above "T")

2. Move your cursor to any point on the screen. Click and drag your mouse to form a rectangle. You can see the size and shape change depending on how your move your mouse.

3. Try the same thing by clicking on the oval and rounded rectangle tools to add two more shapes to the screen.

Eraser Tool

If you make a mistake, you can use the eraser tool to remove any item you no longer want on the screen.

1. Click on the eraser tool.

2. Click and drag the eraser to erase part of one of the shapes on the screen.

The eraser can also be used to fill in the background of the screen with a color. This will cover anything on the screen.

1. Double click on the eraser tool. A window will be shown that asks you to **select a background color.**

2. Pick any color you like, then click ok. The screen will then fill with the color you chose.

Another way to fix the last mistake you made is by using the undo feature.

1. Click on edit from the **menubar**.

2. Select undo. The screen should be the way it was before you filled it with your background color.

We will now move on to explore the paint tools.

Paint Tools

1. Click on the <u>paintbrush</u> tool. Click and drag the <u>paintbrush</u> tool to make some shapes on your screen. Whenever you want to make a new shape, just release the mouse button, move to another point on the screen and then click and drag again to create a new shape.

2. You can double click on the <u>paintbrush</u> tool. This will bring up a window that will let you select the size and shape of your paintbrush. Click on the <u>largest dot</u> and <u>ok</u>. Paint on your screen using this tool.

3. Double click on the <u>paintbrush tool</u> again. Choose the large square.

4. Click on the <u>spray can</u> tool. Click and drag the mouse around your screen. Try and write your name using the <u>spray can</u> tool.

Adding a New Card (screen)

1. Click on <u>edit</u> on the **menubar**, then choose <u>new card</u>.
   You should now have a blank screen.

Line and Pencil Tools

The line tool can be used to draw lines. The pencil tool is used in the same way as a regular pencil, but is more difficult to do on the screen.

1. Click on the <u>line</u> tool. (This is the straight line beside the eraser tool.)

2. Draw a box on your screen.

3. Double click on the <u>line</u> tool. The window that shows difference sizes of line should appear. Select a thickness of the line by <u>clicking on one of the lines</u>.

4. Draw another box on your screen.

5. Click on the <u>pencil</u> tool.

6. Try and draw a stick figure of yourself.

Saving a Stack

1. Select File from the **menubar**.

2. Select save stack as...

3. In the **save in box**, click on the **down arrow**.

4. A list will appear, click on the "a" drive.

5. In the **File name box** type "Mod1".

6. Click on Save.

Your file has now been saved. Click on the **file menu** and select exit. You have now exited the program.

Practice

Ask participants to complete the first set of questions (Page 73). Circulate in the room to see if anyone needs help.
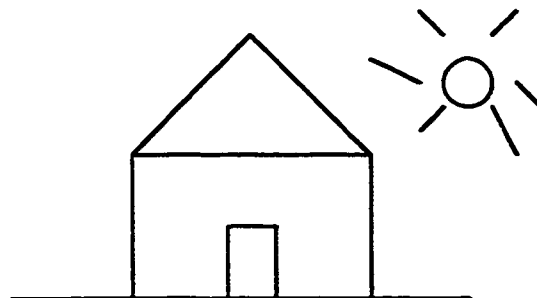
Module 1 – Practice Items

Remind participants that, if necessary, they should refer to previous pages in their manual to help them complete the exercises.

1. Access Hyperstudio
2. Create a new stack

Use the tools as follows to create a picture similar to the one below.

1. Use the text tool to type "This is my house" near the top of the page.

2. Use the line tool to draw a line on the bottom half of the page.

3. Use the rectangle tool to draw a box on the line in the middle of the page.

4. Use the rectangle tool to draw the door.

5. Use the line tool to draw the roof.

6. Use the circle tool to draw the sun.

7. Use the pencil tool to draw the rays for the sun.

8. Use the paintbrush tool to add some clouds to your picture.

9. Type "Screen 1" somewhere on the page.

10. Erase one of the clouds.

11. Add a card to the stack.

12. Save the stack on the "a" drive.

Module 2

We will now explore some other features of the program. We will learn about backgrounds, borders, clip art, buttons and sound.

Creating a Background

1. Click on New Stack from the main screen. Proceed as we have discussed, until you have a blank screen.

2. From the **File Menu**, select Import Background.

3. You will be asked **"Where do you want to get your graphic?** Choose **disk file** and then ok.

4. Find the **"HSArt"** folder. It should show up automatically in the **Look in box** on your screen.

5. Look through the list of files until you find the **"planets"** file. (Files are listed in alphabetical order.) Highlight it and then click the open button located near the bottom right hand corner of the screen. You will be asked if you want to **resize**, click on yes. You should have a screen that shows the planets.

6. From the **file menubar**, click on tools and hold down the mouse and drag the tool palette along the side of the screen.

7. Double click on the text tool. Chose a font, choose bold, and choose the color yellow. Then click ok.

8. Move your cursor beside a planet and Type "This is the planet I would like to visit". You may want to use the return key to keep text close to object.

Note: once you have put in the text you cannot go back and change it. You can use the eraser tool to erase your text, but it will also erase the background.

We will now explore borders. Add a new card to your stack (edit, new card).

Adding Borders

Borders are used to decorate or identify groups of cards in a stack. Borders can be used to frame the card with different colors or patterns.

1. Choose the rectangle tool from the **tool palette**. Move your cursor to the upper left corner. Click and drag the cursor (looks like a +) across and down the screen until the box has an equal border around the screen.

2. Select the paint bucket from the **tool palette**.

3. Select a pattern or color from the **color palette**.

4. Place the paint bucket so the paint will go between the lines of the outside screen and the border (i.e. not in the middle of the page).

5. Click the paint bucket tool again. You should see the pattern you selected form a border around the outside of the screen.

You now have a border for this card. (Note: you can fill the inside of the page in a similar manner, with another pattern or color.)

We will now work on navigating from one card to another by using buttons. Buttons that have the same job should be in the same place on each card to help the user to navigate through the project. As well, they should look similar such as matching arrows or similar wording.

Adding Buttons

1. From the **objects menu**, choose add a button. You should see the **Button Appearance window.**

2. Type in "previous" in the name box.

3. Click on Icons. You will see a selection of icons. Chose the icon with the hand point to the left. Click on ok.

4. The **Button Appearance window** is displayed again. Click ok.

5. You should see the button with "previous" shown in the middle of the screen. With your cursor in the middle of the button, move the button to the bottom left corner of your screen.

6. Click on the card outside of the button. You should see the **Actions window.**

7. Choose previous card in the places to go column. You will see the **Transitions window.**

8. Choose "top to bottom." Click on try it to see how it works.

9. Click ok.

10. In the **Actions window**, the **Things To Do** options are on the right-hand side of the window.

11. Select play a sound.

12. Select any sound you like.

13. Click on ok.

Note: To move around with the buttons, you must be in browse mode. You do this by clicking on the hand located in the top left-hand side of the tool palette.

You can also move by selecting move from the **menubar** and selecting appropriate card.

We will now explore the color palette tool and the clip art feature. Add a new card to your stack (edit, new card).

Color palette and Clip Art

1. Move the color palette from the **colors menu** in the same way you did with the tool palette (click and drag the palette to one side of the screen).

2. Move the **tool palette** from the **tools menu** and move it to another side of the screen.

3. Click on the paint bucket tool in the **tool palette.**

4. Pick a dark color from the **color palette.** (blue, purple)

5. Move your cursor anywhere on the page and click on the paint bucket tool again. Your page should be covered with the color you chose.

We will now choose a clip art.

1. From the **file menu**, select add clip art.

2. From the **HSARt** folder select **Flags** and click on open.

3. Move your cursor to one side of the **Canadian flag**. Click and drag the cursor until the flag is outlines with small dotted lines.

4. Click on ok.

5. Move your flag to the middle of the screen, by clicking on it and moving it. Make the flag larger or smaller by clicking on the corner of the box and dragging it in our out. Once the flag looks the way you want it to, click somewhere on the page.

Practice

Ask participants to close the stack they are working on (no saving), and then complete the first the next of practice questions on page 80. Circulate in the room to see if anyone needs help.

-

Module 2 – Practice Items

Remind participants that, if necessary, they should refer to previous pages in their manual to help them complete the exercises.

1. Create a new stack.

2. Add a background. (File, Import Background)

3. Type some text. (Double click on text tool)

4. Add a clip art to current card. (File, add clip art)

5. Add a new card.

6. Add a border and fill it with a pattern or color. (Rectangle tool, color palette, paint bucket tool)

7. Add a button to move to the previous screen and include transition and sound. (Objects, add a button)

8. Change the background inside the rectangle by using the color palette tool. (Colors, paint bucket)

9. Type "The End".

Module 3

Ask the participants to turn to page 82 of their participant guides. They should complete the exercise "All About Me" according to the guidelines provided. If they have any questions, they should ask the instructor.

Evaluation

Once the participants have completed the Assignment – "All About Me", hand out the final assignment without giving any instructions.

Use the Final Assignment Checklist to evaluate the level of accuracy for each item on the checklist for each participant.

When the participant has completed the evaluation, hand out the Participant Survey questionnaire and ask participants to complete and return the survey.

Appendix C

Participant Guide

Introduction to Hyperstudio

Participant Guide

Table of Contents

Introduction

This workshop is an introduction to using Hyperstudio software. This software is classified as an authoring tool, which permits the user to integrate various elements such as text, graphics, video, sound and navigation. Through the use of these multimedia elements, the story or material being presented can be enhanced by the visual representation of the elements.

The instructor will present the information and then you will be given the chance to practice skill that has been demonstrated by the instructor.

The course contains 3 modules. The first module covers creating, opening and saving a stack, as well as using the tool palette to create objects. The second module covers adding a background, changing colors, adding borders, clip art, buttons with sound as well as printing the stack. In the final module you will create your own 3-card stack that uses information learned from the previous modules.

Module 1

In Module 1 you will learn:

- How to access Hyperstudio.

- How to create a stack.

- How to use the text, drawing, line, eraser and paint tools.

- How to add a new card to your stack.

- How to save a stack.

Module 1

Opening a Stack

1. Access Hyperstudio by <u>double clicking</u> on the <u>Hyperstudio</u> icon. The icon looks like a green book with a white hand.

2. Click on <u>new stack</u> icon.

3. Question will be asked: **Do you want to leave the home stack?**

4. Click on <u>yes.</u>

5. Question will be asked: **Do you want to create a new stack called "untitled"?** Click on <u>ok.</u>

There should now be a blank card with the name **"untitled"** at the top of the screen. A stack has now been created.

Using the Tool Palette

1. From the **menubar**, click on tools and hold down the mouse and drag the tool palette along the left-hand side of the screen.

2. Click on the text tool "T". (It is on the bottom left-hand side of the palette). This is the tool that lets you add text to your screen.

3. When you move your mouse, you will notice it is a straight line with a little line on the top and bottom.

4. Click once on the screen where you want to text to start.

5. Type in your name and address. You must hit the enter key to move down a line. The computer does not do it automatically.

6. Click on another location on the screen. Double click on the "T" in the tool palette. This brings up a window that lets you change the size, color and style of the text. Choose "Schoolboy", size 18, and any color. Click ok.

Now type in a sentence or two.

Using the Drawing Tools

There are 3 tools for drawing, and they are the rectangle, oval and round rectangle shapes.

1. Click on the rectangle tool. (Tool above "T")

2. Move your cursor to any point on the screen. Click and drag your mouse to form a rectangle. You can see the size and shape change depending on how your move your mouse.

3. Try the same thing by clicking on the oval and rounded rectangle tools to add two more shapes to the screen.

Eraser Tool

If you make a mistake, you can use the eraser tool to remove any item you no longer want on the screen.

1. Click on the eraser tool.

2. Click and drag the eraser to erase part of one of the shapes on the screen.

The eraser can also be used to fill in the background of the screen with a color. This will cover anything on the screen.

1. Double click on the eraser tool. A window will be shown that asks you to **select a background color.**

2. Pick any color you like, then click ok. The screen will then fill with the color you chose.

Another way to fix the last mistake you made is by using the undo feature.

1. Click on _edit_ from the **menubar**.

2. Select _undo_. The screen should be the way it was before you filled it with your background color.

Paint Tools

1. Click on the _paintbrush_ tool. Click and drag the paintbrush too to make some shapes on your screen. Whenever you want to make a new shape, just release the mouse button, move to another point on the screen and then click and drag again to create a new shape.

2. You can double click on the _paintbrush tool_. This will bring up a window that will let you select the size and shape of your paintbrush. Click on the _largest dot_ and _ok._ Paint on your screen using this tool.

3. Double click on the _paintbrush tool_ again. Choose the _large square_.

4. Click on the _spray can_ tool. Click and drag the mouse around your screen. Try and write your name using the _spray can_ tool.

Adding a New Card (screen)

Click on _edit_ on the **menubar**, then choose _new card_.

You should now have a blank screen.

Line and Pencil Tools

The line tool can be used to draw lines. The pencil tool is used in the same way as a regular pencil, but is more difficult to do on the screen.

1. Click on the line tool. (This is the straight line beside the eraser tool.)

2. Draw a box on your screen.

3. Double click on the line tool. The window that shows difference sizes of line should appear. Select a thickness of the line by clicking on one of the lines.

4. Draw another box on your screen.

5. Click on the pencil tool.

6. Try and draw a stick figure of yourself.

Saving a Stack

1. Select File from the **menubar.**

2. Select save stack as...

3. In the **save in box**, click on the down arrow.

4. A list will appear, click on the "a" drive.

5. In the **File name box** type "Mod1".

6. Click on **Save.**

Your file has now been saved. Click on the **file menu** and select exit. You have now exited the program.
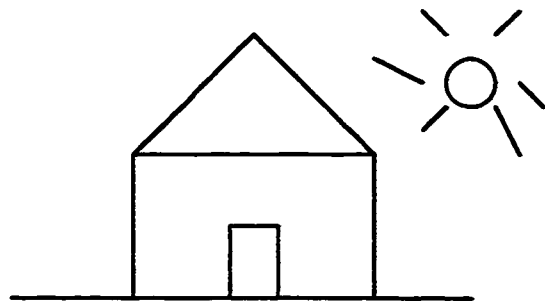
Turn to the next page to complete the practice items.

Module 1 – Practice Items

1. Access Hyperstudio   2. Create a new stack

Use the tools as follows to create a picture similar to the one below.

1. Use the text tool to type "This is my house" near the top of the page.

2. Use the line tool to draw a line on the bottom half of the page.

3. Use the rectangle tool to draw a box on the line in the middle of the page.

4. Use the rectangle tool to draw the door.

5. Use the line tool to draw the roof.

6. Use the circle tool to draw the sun.

7. Use the pencil tool to draw the rays for the sun.

8. Use the paintbrush tool to add some clouds to your picture.

9. Type "Screen 1" somewhere on the page.

10. Erase one of the clouds.

11. Add a card to the stack.

12. Save the stack on the "a" drive.

Module 2

In Module 2 you will learn:

- How to create a background.

- How to use the color palette to change colors.

- How to add a border and clip art.

- How to add buttons, sound and transitions.

- How to save a stack

Module 2

Creating a Background

1. Click on **New Stack** from the main screen. Proceed as we have discussed, until you have a blank screen.

2. From the **File Menu**, select Import Background.

3. You will be asked: **"Where do you want to get your graphic?** Choose disk file and then ok.

4. Find the **"HSArt"** folder. It should show up automatically in the **Look in Box** on your screen.

5. Look through the list of files until you find the **"planets"** file. (Files are listed in alphabetical order.) Highlight it and then click the open button located near the bottom right hand corner of the screen. You will be asked if you want to **resize,** click on yes. You should have a screen that shows the planets.

6. From the file menubar, click on tools and hold down the mouse and drag the tool palette along the side of the screen.

7. Double click on the text tool. Chose a font, choose bold, and choose the color yellow. Then click ok.

8. Move your cursor beside a planet and type: "This is the planet I would like to visit". You may want to use the return key to keep text close to object.

Note: once you have put in the text you cannot go back and change it. You can use the eraser tool to erase your text, but it will also erase the background.

Add a new card to your stack (edit, new card).

Adding Borders

Borders are used to decorate or identify groups of cards in a stack. Borders can be used to frame the card with different colors or patterns.

1. Choose the rectangle tool from the **tool palette**. Move your cursor to the upper left corner. Click and drag the cursor across and down the screen until the box has an equal border around the screen.

2. Select the paint bucket from the **tool palette**.

3. Select a *pattern* or *color* from the **color palette**.

4. Place the paint bucket so the paint will go between the lines of the outside screen and the border (i.e. not in the middle of the page).

5. Click the paint bucket tool again. You should see the pattern you selected form a border around the outside of the screen.

   You now have a border for this card. (Note: you can fill the inside of the page in a similar manner, with another pattern or color.)

➤ Buttons that have the same job should be in the same place on each card to help the user to navigate through the project.

➤ Buttons should also look similar such as matching arrows or similar wording.

Adding Buttons

1. From the **objects menu**, choose add a button. You should see the **Button Appearance** window.

2. Type in "previous" in the name box.

3. Click on Icons. You will see a selection of icons. Chose the icon with the hand point to the left. Click on ok.

4. The **Button Appearance window** is displayed again. Click ok.

5. You should see the button with "**previous**" shown in the middle of the screen. With your cursor in the middle of the button, move the button to the bottom left corner of your screen.

6. Click on the card outside of the button. You should see the **Actions window.**

7. Choose previous card in the places to go column. You will see the **Transitions window.**

8. Choose "top to bottom." Click on try it to see how it works. Click ok.

9. In the **Actions** window, the **Things To Do** options are on the **right-hand-side** of the window.

10. Select play a sound.

11. Select any sound you like. Click on ok.

> To move around with the buttons, you must be in browse mode. You do this by clicking on the hand located in the top left-hand side of the tool palette.

> You can also move by selecting **move** from the **menubar** and selecting appropriate card.

Add a new card to your stack (edit, new card).

Color palette and Clip Art

1. Move the color palette from the **colors menu** in the same way you did with the tool palette (click and drag the palette to one side of the screen).

2. Move the tool palette from the **tools menu** and move it to another side of the screen.

3. Click on the paint bucket tool in the **tool palette**.

4. Pick a dark color from the color palette. (blue, purple)

5. Move your cursor anywhere on the page and click on the paint bucket tool again. Your page should be covered with the color you chose.

Adding Clip Art

1. From the **file menu**, select <u>add clip art</u>.

2. From the "**HSARt**" folder, select <u>Flags</u> and click on <u>open</u>.

3. Move your cursor to one side of the **Canadian flag**. <u>Click and drag</u> the cursor until the flag is outlined with small dotted lines.

4. Click on <u>ok.</u>

5. Move your flag to the middle of the screen, by clicking on it and moving it. Make the flag larger or smaller by clicking on the corner of the box and dragging it in our out. Once the flag looks the way you want it to, <u>click somewhere on the page</u>.

You can now practice what we have just learned. Turn the page and complete the practice items.

Module 2 – Practice Items

Please refer to the previous pages in the manual if you need to.

1. Create a new stack.

2. Add a background. (File, Import Background)

3. Type some text. (Double click on text tool)

4. Add a clip art to current card. (File, add clip art)

5. Add a new card.

6. Add a border and fill it with a pattern or color. (Rectangle tool, color palette, paint bucket tool)

7. Add a button to move to the previous screen and include transition and sound. (Objects, add a button)

8. Change the background inside the rectangle by using the color palette tool. (Colors, paint bucket)

9. Type "The End".

The instructor will explain the next part of the lesson once everyone has completed the practice exercises.

Module 3

In Module 3 you will:

- ❏ Practice some of the skills you have learned.

- ❏ Learn how to print a stack.

Assignment – All About Me

You are going to prepare a small (3-card stack) with information about yourself.

Card 1

- Fill the screen with a yellow background.
- Type "All About Me" in a dark color.
- Use the pencil or paintbrush tool to draw a picture of yourself or something you like.
- Add a button with sound and action to move to the next card.

Card 2

- Add a border.
- Add a clip art of something you like (animals, activity, etc.).
- Add text to describe the clip cart (i.e. I like dogs because they are cute).
- Add 2 buttons. One to move to the next card, and one to the previous card.

Card 3

- Add the background "Canada".
- Use the paintbrush tool to circle the province of Quebec.
- Add blue text: "This is where I live."

Go into browse mode and view your stack.

Print your stack

1. From the File menu, select print.
2. Choose "all cards" and "one per page"
3. Click ok.

The instructor will hand out the final project for today. After completing this project you will have completed the Introduction to Hyperstudio Course. If you have any questions about the course or the material covered, please feel free to discuss your questions with the instructor.

Congratulations!
You have just completed the
Introduction to Hyperstudio Course.

Appendix D

Final Evaluation Handout

Final Assignment

This is the last stack you will create today! You can choose any backgrounds, colors, clip art etc. to complete the project.

Card 1

- Fill the screen with a background.
- Type in text to describe the stack.
- Use the object tools to enhance the look of the page.
- Add a button with sound and action to move to the next card.

Card 2

- Add a border.
- Add a clip art.
- Add some text. (Different color than previous card.)
- Add 2 buttons. One to move to the next card, and one to the previous card.

Card 3

- Add a background.
- Add text to describe the background.

Print your stack.

Save your stack on the "a" drive.

Appendix E

Final Assignment – Checklist

Participant: _____

Note: each item is worth 2 points.

1. Does the stack contain a background?   Yes _____   No _____

2. Do 2 cards contain buttons?   Yes _____   No _____

3. Does each card contain text?   Yes _____   No _____

4. Does the stack contain objects?   Yes _____   No _____

5. Does the stack contain a clip art?   Yes _____   No _____

6. Does 1 card contain a border?   Yes _____   No _____

7. Are there 2 colors of text?   Yes _____   No _____

8. Do the buttons contain sound?   Yes _____   No _____

9. Was the stack printed?   Yes _____   No _____

10. Was the stack saved?   Yes _____   No _____

Total Score: _____ out of 20.

Participant Survey

Please take a few minutes to complete the following survey. Place a check mark beside the choice that matches your feelings about the Introduction to Hyperstudio course.

1. I enjoyed the course.

   Yes _____   Somewhat _____   No _____

2. How difficult was the course?

   Too easy _____   About right _____ Too difficult _____

3. How did you find the length?

   Too short _____   About right _____ Too long _____

4. How were the directions for the activities?

   Confusing _____   o.k. _____   Very clear _____

5. How did you find the practice exercises?

   Too easy _____   About right _____ Too difficult _____
   Too few _____   About right _____ Too many _____

6. Would you like to receive instruction in the form again?

   No _____   Maybe _____   Yes _____

7. Do you like to use computers?

        Yes _____   Sort of _____   No _____

8. Will you feel confident in helping children with this software?

        Yes _____   Somewhat _____   No _____

9. Overall, how would you rank this course?

        Good _____   Fair _____   Poor _____

10. If you have any comments or suggestions concerning the course, please write them down here.

Appendix G

Interview Questions

1. Would you have liked the workshop to be more challenging?

   a. Difficult concepts (i.e. more advanced techniques, importing pictures, etc.)
   b. Less Guidance (i.e. fewer tips or instructions)

2. Was there any area (skill) that you would have wanted more explanation?

3. Were there any parts that you found really difficult?

4. If you had to change one thing in this workshop what would it be?

5. Did you feel challenged or bored?

6. Do you feel learning the software like this is better than learning things week-by-week (like KidPix)?