SAIL Online

Beverly J. Ewert Anderson

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Beverly J. (Ewert) Anderson

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Barbara Safford

May 5, 2001
Date Approved

Graduate Faculty Reader

Barbara O'Donnell

May 5, 2001
Date Approved

Graduate Faculty Reader

Rick Traw

May 7, 2001
Date Approved

Head, Department of
Curriculum and Instruction

Abstract

The purpose of this project was to create an online course for a selected group of fourth and fifth grade talented and gifted students.The study, limited to three elementary buildings in the Bettendorf Community School District, Bettendorf, Iowa, was conducted in the Spring of 2001. Twenty-two students from the Talented and Gifted program, SAIL, (Services for Academically Inquisitive Learners) were selected to participate. SAIL Online was an interactive closed web site that provided tools for instruction, research, teacher/student communication, and peer interaction.The project was used to discover if an affective learning community would develop through online communication.The study also sought to determine if the flexibility of working anytime/anywhere would enhance the delivery of enrichment opportunities for the talented and gifted learners. SAIL Online was also an attempt to meet the goals of a unit of instruction using an online delivery system. The responsibility for implementing objectives of the unit entitled, *Inventors and Their Inventions*,was shared by the researcher and the talented and gifted teacher. Findings indicated that although students were competent computer users, they did not exhibit the maturity to initiate and/or continue quality online discussions essential to the formation of a community of learners. It was further determined that the students did not use the online unit flexibly and struggled to maintain active participation in the course. Objectives of the instructional unit were not met because the content did not adapt successfully to online delivery.

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Chapter 1

Introduction

"It is painful to consider that a good portion of America's gifted and talented students spend most of their elementary and middle school careers learning to be average. It is even more painful to admit that they usually succeed. Future generations may look back upon this almost deliberate wasting of intelligence as one of the most grievous crimes of the twentieth century" (Washington, 1997, p. 3). Efforts to expand opportunities for gifted and talented learners outside the walls of traditional schooling have been attempted over the past 20 years (VanTassel-Baska, 1998).

Background

Current program options for gifted and talented students are pullout, grade skipping, subject acceleration, and magnet classrooms (Washington, 1997). "These programs have all held promise for gifted students over time, but in fact are only minimally used because of the cumbersome, scheduling hurdles they create and, worse, the charges of 'elitism' they engender" (p. 1). Today's gifted and talented students deserve more. They are highly computer literate; they know how to use the Internet and have E-mail addresses. "The Internet and distance learning provide opportunities for meeting the needs of gifted children within the school setting. The Internet provides individualized distance learning classes that allow students to progress and proceed at their own pace and level of ability" (p. 1). This research paper is based on the proposal that it is time for schools to consider ways through which computer mediated communication systems and technologies can be used to improve and perhaps replace existing programming for gifted and talented students.

Development of Talented and Gifted Programs

" The first visible special effort in this country on behalf of gifted students in public schools probably can be traced back to a special program in the St. Louis schools in the 1880's" (Gallagher, 1992, p. 544). The first significant study of the gifted was done by Lewis Terman and his colleagues at Stanford University over a period of approximately forty years (VanTassel-Baska, 1998, p. 7). Terman's study laid the groundwork for the scientific understanding of giftedness and paved the way for practical efforts to identify and nurture the gifted in schools. In 1921, Terman and his colleagues began a longitudinal study of 1,528 gifted youth with IQs greater than 140 who were approximately 12 years old. Terman died in 1959, but the study will continue until 2020. (p.7) Terman's research provided a lifetime look at gifted children and what they became as adults.His research also showed that gifted children can be identified as early as elementary school and that contrary to popular belief many talented children underachieve. (Department of Health, Education , and Welfare, 1971.) Excellent research on the gifted was conducted by a number of other researchers during this same period. "Their work extended our insights about the highly gifted, gave us a broader conception of giftedness, and led to trial efforts in educating the gifted" (VanTassel-Baska, 1998, p. 8). "But it was not until after World War II that any sizable number of public schools began to pay special attention to gifted students" (Gallagher, p. 544).

The launching of the Soviet rocket Sputnik in 1959 was viewed by many as a huge educational failure on the part of the United States (VanTassel-Baska, 1998). Why hadn't the United States identified and developed the talent of highly gifted individuals in the fields of mathematics, science, and engineering? Considerable research and training efforts were initiated in the early 1960s to improve educational programming for the gifted and talented. This concentrated effort led to scattered programming for the gifted, but there was still no consistent service in all American schools. Major funding and legislation for the disadvantaged and handicapped displaced interest in the gifted in the late 1960s (p. 8). This lack of funding and legislation was documented in a report titled *Education of the Gifted and Talented* issued by the U.S. Department of Health, Education, and Welfare in August 1971. Statistics gathered in the State Survey indicated that :

> Most of the states have recognized that education of the gifted is an area of substantial educational need and have tried, in a variety of ways, to put some available resources to work. These efforts have been overwhelmed by the more crisis oriented issues of the deprived child, the disruptive child, the child who cannot learn, etc. The limited resources available are absorbed by these problem areas before long-range educational issues as gifted education are considered.

(Department of Health, Education, and Welfare. 1971. Vol. 1, p. V-5)

This report to Congress prepared under the direction of Sidney P. Marland, Jr., the U.S. Commissioner of Education, significantly impacted the direction of gifted education (VanTassel-Baska, 1998, p. 8). The Marland Report suggested that gifted students were ignored in American schools and that some educators were even hostile to gifted students. A new definition of giftedness was established and the scope of gifted education was expanded. New views de-emphasized academic intelligence as the sole indicator of giftedness. A multifaceted approach to talents and ability was included in the new definition. Recommended priorities for federal expenditures were inservice preparation of teachers and other personnel, pilot and experimental programs, and direct aid to school systems (Department of Health, Education, and Welfare. 1971. Vol. 1, p. III-9).

In 1974, an office within the U.S. Office of Education, " was established to support the development of programs for the gifted in American schools" (VanTassel-Baska, 1998, p. 9). National institutes sponsored by this office were influential in bringing about an awareness of the educational needs of gifted and talented youth and in establishing procedures for program services. During the late 1970s and early 1980s programs for the gifted grew "supported increasingly by state educational funding"(p. 10). Every state developed some type of program with full or part-time coordinators. New financial support was available in the 1990s especially to serve educationally disadvantaged gifted students. The U.S. Department of Education established the National Research Center on the Gifted and Talented in 1990. The center funded curriculum projects and allowed research to be done at the university level (p. 10). The projections for the next few years are not optimistic. Program support across states continues to be uneven and many personnel have been given alternate responsibilities. Gifted education is currently dealing with special problems of reduced funding and support. Non- traditional models of instructional delivery have been attempted to enhance learning opportunities for gifted and talented students. These experiences included specialized schools, home schooling, university-based programs, and technology-based options that are used as delivery systems of high-powered curriculum (p. 13).

Online Learning and Communication

Technology-based options are the future trend of instruction. Early computer mediated technology focused on self-paced learning of a rigorous curriculum.These computerized courses did not provide face-to-face dialogue found in the traditional classroom setting. Today online education offers a powerful alternative to current program options. "Online education is not just an electronic medium where students buy their credits, do their work at home, study in isolation, and occasionally communicate with their instructor. It is an inherently relational and human process, not reducible to just sending and receiving electronic messages" (White, 2000, p. vi). Group collaboration across time and space is possible with current technology. "Communication is a pervasive feature of all effective learning environments and even the most independent learners, sooner or later, need to communicate with others" (McKinnin, 1999, p. 321). Information Power: Building Partnerships for Learning, (American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT), 1998), state that information literacy--the ability to find and use information-- and communication are interrelated. Standard Nine states: "The student who contributes positively to the learning community and to society is information literate and participates effectively in groups to pursue and generate information" (p. 39). Indicators of this standard include:

> shares knowledge and information with others; respects others' ideas and backgrounds and acknowledges their contributions; collaborates with others, both in person and through technologies, to identify information problems and to seek their solutions; and collaborates with others, both in person and through technologies, to design, develop, and evaluate information products and solutions. (pp. 39-41)

Social-Emotional Needs of the Gifted

The ability to communicate with a community of learners is imperative to the development of a healthy self-concept in the gifted. VanTassel-Baska (1998) emphasizes programming that links understanding the social-emotional needs of the gifted to instructional strategies. VanTassel-Baska presents a summary of seven observable social-emotional needs of the gifted that differ from the needs of the typical learner. Gifted learners need :

1. To understand the ways in which they are different from other children and the ways in which they are the same

2. To appreciate and treasure their own individuality and the individual differences of others

3. To understand and develop social skills that allow them to cope adequately within relationships

4. To develop an appreciation for their high-level sensitivity that may manifest itself in humor, artistic endeavors, and intensified emotional experiences.

5. To gain a realistic assessment of their ability and talents and how they can be nurtured.

6. To develop an understanding of the distinction between "pursuit of excellence" and "pursuit of perfection".

7. To learn the art and science of compromise. (p. 497)

Development of Online Instruction

According to Schrum and Berenfeld (1997), computer networking began in 1957 as part of America's response to Russia's launching of the Sputnik rocket. President Dwight D. Eisenhower created the Advanced Research Projects Agency (ARPA) to encourage the research and creation of futuristic technologies. ARPA worked to develop a common protocol that allowed communication between computers. This network, ARPANET, linking remote sites through telephone lines was the precursor to the Internet. Conversional dialogue was enabled through the invention of the electronic bulletin board by Douglas Engelbart (Schacter, 1998):

> Engelbart designed computer software that threaded conversation into hypertext hierarchies. A hierarchical type of organization allows an individual to trace progression of ideas within an ongoing conversation. The hypertext component facilitates the conversation's participants in creating and following associative links within that hierarchy such that they are not constrained to the linear nature of the dialogue, but can organize and navigate through the knowledge to meet their own personal needs for understanding. (p. 21)

These two concepts, the Internet and hypertext, were combined to create the World Wide Web. "Tim Berners-Lee first proposed the Web in 1989 while developing ways to control computers remotely at CERN , the Geneva-based European Organization for Nuclear Research." (Quad City Times, 2000). Initially used as means to link scientific research, it has evolved into an important means to communicate as well as a tool for instructional change.

> "[Computerized] distance learning was pioneered at Stanford University more than thirty years ago to meet the increasing demand for high-tech engineers and computer scientists at Silicon Valley. Distance learning technologies, including the use of the WWW, are common practice in higher academic institutions around the world. Today more than 150 accredited academic institutions in the United States offer distance learning programs to earn bachelor and master's degrees. According to the United States Distance Learning Association (USDLA), an organization committed to promoting and developing distance learning, there were no significant differences in effectiveness between distance learning and the traditional learning techniques" (Lau, 2000. n. p.).

America's public schools are beginning to incorporate distance options to enhance learning. Online instruction offers feasible alternatives for students and teachers to traditional classroom instruction."The Internet is the biggest technological change in education and learning since the advent of the printed book some 500 years ago. It will destroy the traditional classroom and replace it with an even better way to learn, and to teach" (Draves, 1998, p. 1). "Technology-mediated distance education creates a vision of schools without walls, freeing learners of all ages from the constraints of time and place and allowing them to learn what they want when they want" (Ludlow, 1998, p. 43).

B. G. Wilson and others in the Peakview Elementary School Study observed eight shifts in teaching methodology that are facilitated by technology use:

1. A shift from lecture and recitation to coaching.
2. A shift from working with better students to working with weaker students.
3. A shift toward more engaged students.

4. A shift from whole-class to small group instruction.

5. A shift from assessment based on test performance to assessment based on products, progress, and effort.

6. A shift from competitiveness to cooperation.

7. A shift from all students learning the same things to different students learning different things.

8. A shift from the primacy of verbal thinking to the integration of visual and verbal thinking. (Wilson, 1994)

These shifts in teaching methodology are part of a new educational environment with its own unmistakable differences. Computer mediated communication and instruction can benefit the classroom learning context by bringing the world into the classroom virtually, by engaging students in collaborative processes, by enabling them to access experts worldwide, and by making each student an active member of the international community (Schrum, 1997). Online learning is different because content is delivered differently and students have to actively initiate learning through dialogue with the teacher and other students. Online learning appears to take more time yet it is results and outcome oriented (Draves, 2000). Computer mediated communications can create the concept of a learning community in which the concept of teacher is replaced. "The students play roles principally as learners while significant others play the roles as facilitators of learning, mentors, critical friends, interpreters, and discussants " (McKinnin, p. 324).

Description of Problem

The talented and gifted program for 4th and 5th grade students in Bettendorf Community School District is called Services for Academically Inquisitive Learners (SAIL). Students were identified for inclusion using district guidelines that incorporated several evaluation measures. Iowa Test of Basic Skills (ITBS), (The Riverside Publishing Co., 1996), Cognitive Abilities Test (COGAT), (The Riverside Publishing Co., 1997), and Structure of Intellect Learning Abilities Test (SOI), (Western Psychological Services, 1985), were used for assessment in addition to teacher and parent recommendations. SAIL was implemented as a pull out enrichment program delivered two hours weekly. Each of Bettendorf's six elementary schools then had separate groups of talented and gifted students, ranging from one to 15 students per building. Instruction was provided by the building Library Media Specialist and a part time Talented and Gifted teacher who traveled between sites. The separate school groups met collectively in September, January, and May for district wide programming. Over a two year period the talented and gifted students had collaborated with the same building population of identified students repeatedly. They also had limited exposure to a variety of instructors and experts. The students had adequate opportunities to use the Internet for information problem solving. They did not have the opportunity to communicate between buildings with peers of like ability level in the same program.

Research Questions

1.Would an online course encourage the development of a community of learners among the talented and gifted students of the selected schools?

2. Would the flexibility of working anytime/anywhere enhance the delivery of enrichment opportunities in the Bettendorf Community School District?

3. Would online instruction meet the goals of a selected curricular unit for talented and gifted 4th and 5th grade students?

Purpose Statement

The purpose of this project was to create an online unit for a selected group of 4th and 5th grade talented and gifted students.

Definitions

Asynchronous communication: A method of sending and receiving information broken into small packets; messages sent to someone asynchronously are meant to be read at the receiver's convenience (Schrum, 1997, p. 161).

Chat room: Public or private area on a computer network where members type messages and receive immediate responses (Schrum, p. 161).

Community of learners: a group of students who collaborate on projects and share ideas freely.

Computer mediated communication (CMC): One of many terms used to describe communications through electronic exchanges; sometimes referred to as telecomputing or educational telecommunications (Schrum, p. 161).

Concept map: to make logical connections between two entities.

Distance education: any instructional activity in which the instructor and the learner are separated by space and time (Keegan, 1988).

Electronic bulletin board: A computer system used as an information source and forum for a particular interest group. (http://www.techweb.com/encyclopedia).

Electronic mail (e-mail): A network application for exchanging mail messages (usually text) over various types of networks using various network protocols, Messages can be addressed to an individual, as well as to large number of people (Schrum, p. 161).

Gifted student: Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance (Gallagher, 1992, p. 544).

Hypertext: The foundation of the World Wide Web, it is a linkage between related text. (http://www.techweb.com/encyclopedia).

Internet: A worldwide collection of interconnected electronic networks that support a common set of data communication protocols: Transmission Control Protocol (TCP) and Internet Protocol (IP) (Schrum, p. 162).

Intranet: An inhouse website that is not accessed by the general public. It may or may not link to the Internet. (http://www.techweb.com/encyclopedia).

Metacognition: how one thinks about and shapes one's own thinking processes, enhances the ability to think critically and creatively. (VanTassel-Baska, p. 337).

Online: Being actively connected to a network or computer system; usually being able to interactively exchange data, commands, and information (Schrum, p. 163).

Online instruction: A method of delivering information that uses the Internet and the World Wide Web. The instructor posts text, audio, and video materials to a site that can be accessed on demand by learners. Sometimes instructors provide opportunities for interaction through e-mail, listserv discussion groups, or live chat rooms (Ludlow, 1998, p. 15).

Synchronous communication: Interaction, via electronic means, at the same time (in real time) (Schrum, p. 161).

Threaded discussion: a running log of remarks and opinions about a subject. Users e-mail their comments, and the computer maintains them in order of originating message and replies to that message. (http://www.techweb.com/encyclopedia).

Virtual community: A community of people, who share intimacy and duration of relationships, and may or may not ever meet one another face-to-face. They share words, ideas, and information through computer networks (Schrum, p. 161).

Assumptions

This project assumed the students had access to computers on a daily as needed basis. It also assumed that the students had a proficient level of technical expertise.

Limitations

This study included students from three elementary buildings in the Bettendorf Community School District. The remaining three buildings were not included. The select group of students studied the same topic for a prescribed length of time. The number of students involved in the course from each building was not equal. Those students selected to participate in the online course were identified talented and gifted students.

Significance

This course was the first online unit offered to elementary students in the Bettendorf Community School District and provided experience in using technology skills to communicate and collaborate with peers from a distance. It created a real life situation in which the students were challenged to use problem solving abilities. This research project served as an example of the type of alternative programming the district could offer for talented and gifted students.

Chapter 2

Methodology

Review of Related Research

Research found on student online instruction falls into three categories; the effectiveness of distance online learning on academic achievement, the benefits of the development of a community of learners, and the success of distance online learning with elementary talented and gifted students.

Academic achievement.

Distance learning with the adult learner is well documented. Fewer studies focus on effectiveness of distance online learning at the primary and secondary levels. Three studies suggest that distance online learning is equally as effective as traditional instruction.

Cavanaugh (1999) conducted a meta-analysis of previously performed studies on the effectiveness of distance online education for the K-12 learner. Nineteen studies included in the analysis met the following criteria:

> a focus on the use of interactive distance education technology for education at K-12 levels, either videoconferencing or Online telecommunications, publication between 1980 and 1998, experimental or quasi-experimental design providing quantitative outcomes from which effect size can be estimated, and freedom from obvious flaws (p. 7).

The data analyzed reported assessment measures from nine hundred and twenty nine students from achievement tests given at the end of a distance education period (p. 14). Student learning performance in an interactive distance education environment was compared with traditional classroom instruction only. Cavanaugh stated that although this type of traditional measure may not be effective in assessing higher order skills that may be impacted by interactive distance education technologies, they are the best estimates of student achievement currently available. Cavanaugh's use of statistical processes established "an average effect size of 0.147, translating to a gain of 0.147 standard deviations on average for a student at the 50th percentile learning with distance education over traditional methods" (p. 15). Although this study showed only small positive gains in student achievement, Cavanaugh concluded that "distance education can be expected to result in achievement at least comparable to traditional instruction in most academic circumstances" (p. 16).

Parker (1999) was interested in the effectiveness of a shared, intranet learning environment on problem-solving ability and reflective metacognition in 9th-10th grade biology students. Subjects for the study were from three public high schools in Conroe, Texas. "The sample contained 78 students of the 1,400 students enrolled in Biology I courses. Two classes from each school were selected and randomly assigned as a control class or a treatment class" (p. 209). Both classes were taught by the same teacher. The classes met two to three times per week for 90 minutes (p. 209). The classes assigned to the treatment group had access to Internet-connected technology in classrooms or computer labs. The researcher provided curriculum in the topic area of ecology, training for teachers in the use of the interactive technology, and administered pre and post testing measures. Student problem-solving ability was measured by the Watson-Glasser Critical Thinking Appraisal (Psychological Corp. 1990). Metacognitive reflection was measured through the use of student-generated concept maps created with Inspiration software program (Inspiration Software, Inc.). " Metacognitive reflection was also evaluated by 1) logons to the threaded discussions Web page, 2) number of threaded statements, 3) number of threaded dialogue statements of response to other student statements, and 4) number of threaded dialogue statements of response to teacher statements " (p. 210). Parker's findings did not significantly support a conclusion that a shared intranet environment improved learner problem solving abilities in science although when individual differences were considered using t-test results and paired analysis, increases in problem-solving abilities were noted. "Given the individual nature of problem-solving ability, these findings suggested even clearer support for the use of collaborative, constructive, and connected technologies in impacting problem-solving ability " (p. 211). Data analysis of results did indicate significant changes in metacognitive reflection. Parker concludes that "tracing learner movements within a browsed Web site has metacognitive as well as problem-solving implications for each and every learner" (p.213).

Schacter (1998) examined children's online learning and achievement under a variety of collaborative situations. He was interested in determining if students with access to either a teacher or a group of same-aged peers would perform better than students without access to either of these resources. He further hypothesized that access to a teacher or a large group of same-age peers would be equally effective learning resources. He also hoped to demonstrate that collaborative interaction on the electronic bulletin board in a computer-supported environment would improve the students' conceptual knowledge. Schacter's study analyzed student achievement over a four week period in the subject area of environmental science. Participants were 109 fourth, fifth, and sixth grade students from an elementary school in southern California. Students were randomly selected and assigned to one of the following conditions: "(a) teacher-student dyad, (b) student-student dyad, (c) same-age peer group with a teacher, (d) same-age peer group without a teacher" (p. 31). The students had approximately three years of computer experience, two of which included the use of the Internet. The students were assigned the task of individually creating a computer-based concept map. In order to complete this task the students searched for pertinent information about environmental science in a simulated electronic Web space, and collaborated using an electronic bulletin board. The purpose of the collaborative discussion was to improve their individual concept maps. This complex task required that the students:

> decide which concepts to focus on in their maps, where they needed help, how to get help, how to formulate questions to ask for help, how to search, when to search, what to search for, and how to manage and allocate time between mapping, searching, and communicating. (p. 27)

Multiple opportunities were planned for the students to interact in the computer supported environment. Students were trained in collaborative group strategies and concept mapping procedures. Participating teachers were trained in Vgotskian theory and apprenticeship teaching methods and in how to use the electronic bulletin board to communicate with students. In order to compile data the students were given a pretest using the computer-based concept map during the first training session and a post test two days after the final concept mapping/collaborative session. The post test consisted of two parts; a set of short answer, true or false, and essay questions and a metacognitive survey. Four junior high and elementary science teachers constructed a concept map that was used as the criterion for evaluating and scoring the student concept maps. Two trained raters scored both tests and the relevancy of concept map information (p. 47).

Results gained from this study led Schacter to conclude that the use of a computer-based collaborative learning environment resulted in increased student understanding of the concepts of environmental science. The study results confirmed his hypothesis that "the individual learning and achievement of students who worked in groups without a teacher present was equal to the learning and achievement of students individually tutored by an adult" (p. 104). Both of these groups gained more conceptual knowledge than the children who worked with only one other child.

These studies indicate distance online learning is equally as effective as traditional instruction with some increase in problem solving ability. They also point to the benefits of the development of an online community of learners.

The community of learners.

Several studies support the positive aspects of interaction between learners and learners and instructor.

A qualitative case study done by five students at the California Institute of Integral Studies is an example of the affective perspective of online learning (Herman, 1999). "Our purpose is to both give a sense of the whole; the how are we doing/how does it feel to learn online, and to describe essences of this learning" (p. 110). A unique aspect of this research study is that it was done entirely online enabling the researchers to experience the process they were evaluating. Unpublished electronic postings for California Institute of Integral Studies were analyzed using a case study format. The researchers believe that the online environment creates a special field for transformational learning and that this field creates a unique online experience of support. " Through the Internet a Web of connection has been established for those who participate" (p. 115). One participant interviewed in the case study is quoted as saying "We were astonished at how quickly we formed close bonds, attributable perhaps to the 'safety' of the online medium which tends to be less threatening than face to face encounters" (p. 116). Collaboration was determined to be an essential component of the online learning experience. The researchers own learning, as they did the case study, supplied evidence that online students learn more from collaboration with members of their group than is learned through traditional methods of instruction. " The communities we have built and are in the process of building online appear to be essential to our learning. We depend on each other for support and encouragement, guidance and understanding" (p. 117). This researcher does not find the results of this study definitive as it was done with a small self-selected population of participants with preconceived attitudes.

Boverie (1997) was interested in evaluating the importance of collaborative interaction to success in learning in distance education programs . She analyzed the collaboration between the learner and the instructor exclusively in interactive satellite-based programs in primary grades, one through six. Two programs, Geonauts produced by Northern Arizona University and Elementary German produced by Oklahoma State University were sources of data collection. These satellite programs have a one-way video, two-way audio format, with interaction taking place with the TV instructor during the live broadcast via telephone and outside of class time via telephone, e-mail, fax, and regular mail. Classes were delivered twice weekly for 30 minutes during the 1995-96 school year. (p. 6). Geonauts, a science program, was delivered to approximately 6,740 students at 65 sites across 14 states (p. 6). Elementary German was delivered to approximately 2,908 students in 140 schools. Boverie collected data from students and teachers using case studies and mail surveys. Results indicated for both German and Geonauts students learner satisfaction could be predicted by the social presence of the instructor and interaction. Boverie concluded that although use of the classroom teacher is the most appropriate model of instruction for K-12 learners there are benefits of asynchronous communication between students and the on-screen instructor. "Education is a collaborative experience, requiring interaction between the instructor and the learner and mediation by others which serves to facilitate the construction of knowledge and validation of the learning that has taken place" (p. 3).

Research has indicated the equal effectiveness of distance online instruction and that collaboration in an online environment has positive affective benefits.

Gifted and talented learners.

A significant study was conducted with able learners and interactive computer technology in primary schools in Scotland. Superhighway Teams Across Rural Schools, STARS, was initiated by the United Kingdom Education Department (Ewing, 1997). Ledy Northern College, the action research project was set up to investigate how learning for students and professional development for teachers can be expanded by the use of electronic communications networks. Secondary goals of the study were to develop strategies to support isolated able pupils through collaborative work and to encourage problem solving, and critical thinking through distance learning. The length of the study was one year (1996) covering two academic sessions. Education Authorities selected eighteen primary schools to participate in the project. Each school met the following criteria: able children were present in the school population and the schools were small and in relatively remote rural areas. Student enrollment ranged from less than nineteen pupils to more than 71 pupils per school. The number of staff ranged from one teacher to more than 4 teachers per school (pp. 6-7). Two secondary schools were included in the last two months with attendance of nineteen and 45 and 3 and 6 teachers respectively. The total number of children participating was 127 of whom 116 were in a Primary school and 11 in Secondary school. The distribution of boys to girls was relatively even at both levels. The majority of the on site learning groups included six children or less. The students taking part in the project were identified as able learners by teachers using guidelines supplied by the Education Authorities. The STARS Project supported registration costs to FirstClass (FirstClass, 2000) software used to create the network link between schools. FirstClass provided three means of communication: synchronous chat with others online, e-mail, and conferences. Individual schools were required to provide regular access to a computer with a high speed modem. The learning environment was managed by a team from Northern College in Dundee and Aberdeen.

Two aspects of children's learning were targeted in the STARS Project: collaborative learning within the classroom and in peer groups across several schools and critical and creative aspects of thinking in a problem solving environment. The learning tasks were initially designed to stand alone as schools became more familiar with the communication functions of the software at their own pace. Collaborative tasks were then planned to move into a more structured yet authentic co-operation between pupils in different schools. The tasks applied in the context of a STARS Trek required students in different schools to solve the same problems at the same time. The tasks often did not have single solutions. The concept of *teaching thinking* was chosen as the focus of the project because it would be challenging for able children and it would be different from current classroom methods of instruction. A problem solving context seemed to fit with computer mediated learning.

Data were collected in two ways: FirstClass provided a record of all contributions made and a questionare and personal interview of teachers and students was completed. Further information was accessible throughout the entire project as a result of frequent contact between the project staff and the schools involved. From the evidence collected the project directors concluded that the STARS experience was "successful for meeting the needs of able (and other) children in a novel and exciting way" (p.94). Directors also noted that able students had special gains from this type of distance learning environment, "in problem solving and logical thinking skills including the awareness that sometimes others would out perform them" (p.71). The directors observed that able students in this learning context "adopted special roles as leaders and coordinators, taking greater responsibility for their own learning" (p.74).

Summary

Research pertaining to online distance education and its use with an audience of talented and gifted elementary students has indicated equal effectiveness to traditional instruction. The studies conclude that collaborative online environments contribute to improvement in problem solving abilities and increased conceptual knowledge. Collaboration through asynchronous means has been shown to improve metacognitive reflection and student-to-student learning. Talented and gifted students were shown to have benefited from online interactive learning in problem solving skills and in assuming greater responsibility for personal learning. Distance online learning has been presented as an new and exciting method of instruction for the able learner. The current structure of the Talented and Gifted Program in Bettendorf Community School District would benefit from the inclusion of a distance online learning component. The results of academic achievement, collaboration, and success with talented and gifted students support the use of an online learning environment.

Procedures

SAIL Online was an interactive website that provided tools for instruction, research, teacher/student communication, and peer interaction for fourth and fifth grade talented and gifted students. The students communicated with each other and the instructor electronically. The author acted as instructional designer and facilitator. The major piece of software used to create SAIL Online was World Wide Web Course Tools (WebCT, 2000). WebCT software was chosen by the instructional designer from previous first hand experience. WebCT was the course management system which provided the structure for design of the course and the instructional designer developed the course. Files containing information and images were created as hypertext markup language (HTML) files. Password protected, the closed interactive website was accessible from any computer with a Web browser and Internet access. WebCT provided the set of tools to be used by the students including course materials, communication tools, calendar, assessment tools, and site map. SAIL Online resided on a multi-media server in the University of Northern Iowa's (UNI) Computer and Technology Center (CET). TyAnn Morehead, Instructional Design and Development Specialist for UNI, provided technical support for the course designer.

Fourth and fifth grade students from the Bettendorf Community School District's Talented and Gifted program, SAIL (Services for Academically Inquisitive Learners) were selected to participate in SAIL Online. Students were previously identified for inclusion in the talented and gifted program using district identification policies. The students met weekly in small groups in their respective buildings with a Talented and Gifted teacher and had completed units in the district talented and gifted curriculum. They had not had regular opportunities to communicate as a large group since an outdoor camp experience in September. Three elementary schools, Grant Wood (GW), Mark Twain (MT), and Thomas Jefferson (TJ) were represented in the student population. A total of 22 students participated, eighteen from GW, two from MT, and two from TJ. One talented and gifted coordinator met with these buildings. The instructional designer of SAIL Online believed that this sampling of students reflected a cross section of academic achievement, computer skills, and computer access representative of the gifted and talented student population in the district. Sheila Porter, a course facilitator for the Online Campus of the University of Phoenix, states that online classes function best with nine to thirteen students due to the high degree of interaction between students and faculty on a daily basis (White, p .83).

Two preliminary meetings were held with the students. The first meeting provided general information on course concepts and goals. Students were given written permission letters to be signed by parents and returned prior to participation. The second meeting provided instruction and practice in the use of the electronic course tools available on the interactive website. Ethical use of technology and suggested dialogue format were reviewed. Students were instructed to access the online course to receive course content, post discussion items, and communicate with each other and the facilitator. They were encouraged to link to selected websites for further research and exploration. Students practiced writing and posting threaded responses to aid continuity of discussion.They completed an online survey to assess computer competency, confidence, and interest. Participating students had access to computers at school on a daily basis. Students were also encouraged to access the course from home computers. Arrangements were made for students to access the website from school computers outside the regular school day if needed. The communication goal set by the instructor/facilitator was for the students to interact with each other without coaching and to post meaningful contributions to the discussion. The students were expected to accomplish the objectives of the course as determined by the instructional designer and the talented and gifted teacher.

The instructional designer assumed the role of facilitator of the online course. The facilitator was responsible for training the students and the talented and gifted teacher . The course facilitator and the talented and gifted teacher actively participated in the ongoing electronic dialogue through the communication tools function.

The theme of *Inventors and Their Inventions* was chosen for the online course. Students researched inventors and inventions of the twentieth century through pre-selected electronic resources. Students received instruction in procedures used to document the invention process. The culmination of the online course was the creation of inventions by individual students. The inventions were shared in a district sponsored Invention Convention. The students completed two survey tools upon completion of the course. The post-survey asked the students to react to the online course in its entirety. The Invent Iowa reflection was a self assessment of participation in the Invention Convention. The adult participants met face-to-face to share observations and conclusions. The author presented results and observations on the implementation of the online component to the district Talented and Gifted Committee and the Technology Coordinator.

Chapter 3

SAIL Online

Project Format: Accompanying Zip Disk

Chapter 4

Summary, Conclusions, Recommendations

Summary

Peer interaction is important to the growth and development of socially responsible children of all ability groups. Collaborative communication experiences are especially important to the community of talented and gifted students in the elementary school setting. The pull-out delivery model of the talented and gifted program in Bettendorf Community School District, Bettendorf, Iowa, provides limited opportunities for like ability peers to communicate. Small group meetings limited to once per week create communication response delays between the talented and gifted teacher and the students who often work on projects independently. In addition, students from different elementary buildings meet together infrequently. SAIL Online was an attempt to integrate a web based communication component with a standard unit on inventors and inventions.

The idea for SAIL Online came from the researcher's positive experience of using a WebCT component with distance classes delivered by the University of Northern Iowa (UNI). The researcher predicted that talented and gifted elementary students could be nurtured and supported by a similar component. The researcher proposed that the communication bonds of this group could be enhanced by independent use of communication tools in a closed class website. In addition, the researcher wanted to try online instruction as an enhancement of services for talented and gifted students across the school district.

Designing and facilitating an online unit offered the avenue for testing the researcher's predictions. Using WebCT software the researcher, with input from the talented and gifted teacher, adapted a unit, *Inventors and Their Inventions,* to an online format. Twenty-two 4th and 5th grade students from three elementary schools participated in the unit over an eight week period during the spring semester of 2001.

Conclusions

Three online surveys/quizzes gave the researcher documentation of student reactions to computer usage, the online format, and the invention process.

Pre-survey results (Appendix A) gave an overall snapshot of the students' access to computers, their self assessment as computer users, and their reaction to the idea of learning online. Ninety percent of the students had computers at home. Eighty-six percent of the students had Internet access at home. Seventy-one percent of the students reported using computers up to 10 times weekly with the most frequent activity playing games. Other common uses for computers were to email family and friends, do homework, or browse the Internet. Telephone contact was the most frequently used means of communicating with friends followed by person to person contact at each others' homes. Many students commented to the researcher that they are not allowed to chat on the Internet. The majority of the students (60%) felt that they were good computer users including 15% who ranked themselves as expert users. Seventy percent responded that they were very comfortable using computers and 90% stated that they liked using them. Most of the students felt that using the computer was a good way to learn. Ninety-five percent ranked themselves as frequent participants in traditional classrooom discussion.

Post survey responses (Appendix B) showed some changes in self assessment. The number of students who ranked themselves expert computer users grew by 11% (from 15% to 26.3%). More students ranked themselves as being very comfortable using a computer. Seventy-nine percent of the students reported using the private mail function confirming their desire to communicate electronically. The participants felt that discussion contributions and content learned were the same in a traditional classrooom setting. Friendships seemed to be relatively unaffected by the online course. Seventy-four percent responded that they would take another online course.

Every year upon completion of an individual invention project and participation in a district Invention Convention students were asked to reflect on this experience. This year the reflection questions were available online in the quizzes/surveys function. (Appendix C) Valuable affective data were gathered through the online reflective responses. When asked to record their thoughts on being a student inventor most comments included multiple sentences of a positive nature such as: "I like it! It is fun and it realy makes you think! When my invention was one two win it made me feel proud!" and "I think it's fun to know that I came up with something that has never been invented. I like to think 30 years from now how would it make a difference if it was invented. It would be cool to see how many people would buy it". Responses to a question about things they enjoyed about the Invention Convention indicated their desire to communicate with like ability peers evidenced by comments such as, " I also liked seeing my friends from camp. It was fun to see all the other inventions." " I enjoyed having the time to share my ideas with others." Lengthy, thoughtful comments were made in response to a question asking what they learned by going through the invention process. One student commented, " Patience. I had to be patient to build my invention and I couldn't rush through things like I usually do because they wouldn't turn out. I also learned to be proud of my ideas and not care what other people think about them." The desire to take another course online was apparent in the following comment: "Next year I want to do it again it was a lot of fun. I want to also do the online course again." This researcher noted that the student responses were more extensive and detailed online than they had been in previous years when completed in a traditional paper and pencil format.

Research question one asked if the online course would encourage the development of a community of learners among the talented and gifted students of the selected schools. The researcher's observations are that a supportive, collaborative community of learners was not formed. Although the majority of students reported using the private mail function, they tended to send messages only to the students they already knew well. The researcher had hoped that the 2 students from MT and the 2 students from TJ would feel a closer bond with the larger group of students at the GW site. This did not occur. The post survey responses also indicated that friendships remained relatively unchanged throughout the course. Several factors affected the formation of a community of learners. First, the design of the course did not require collaborative problem solving. The students did not need to communicate with each other to complete the unit. Secondly, the students were inexperienced in responding to threaded discussions. Their comments were disjointed and random, causing some students to lose interest or become frustrated. The postings were often silly and unrelated to proposed discussion items.The students needed much more practice in following threaded discussions and posting appropriate, meaningful responses. Lastly, the students did not establish a routine of communicating as the researcher had hoped. Repeated promptings by the talented and gifted teacher were needed to encourage discussion contributions.The majority of the children did not exhibit the maturity to initiate and continue online discussions.

Research question two asked if the flexibility of working anytime/anywhere would enhance the delivery of enrichment opportunities for the students. It is the researcher's opinion that in this trial setting the delivery of services was not enhanced for several reasons. The majority of the students did not use the online course flexibly. Students had daily access to computers in the classroom but chose to wait to post discussion during scheduled weekly group meetings with the talented and gifted teacher. It was not uncommon to see a student send a private mail message to a student at the next computer terminal in the school technology lab. Students who attempted to access the unit from home had difficulty if their network browsers did not support WebCT. The students did not maintain active participation in the course. Initially they used the communication tools enthusiastically. Several set up private chats outside the allotted time. After the first day or two many students reported that they simply forgot to check the website regularly. Participation might have stopped completely if the facilitator had not gone repeatedly to the weekly scheduled classes to reassign the online tasks. The course materials function and the pre-selected research sites were not as appealing to the students as the communication tools.

Another impediment to flexible use occurred because the responsibility for implementing the unit objectives was shared by the teacher and the researcher. The researcher had difficulty adapting the content of the unit to the online format. The talented and gifted teacher had difficulty adapting her teaching style and instructional time to include use of the online opportunities. The majority of student instructional time was spent learning about the invention process through manipulatives and group challenges. Rather than communicating online with distance experts, local speakers were used to authenticate successes and failures in the invention process. Time spent researching famous as as well as little known inventors via the online course was minimal. Content including explorations of Rube Goldberg contraptions via the Internet was deleted. Student time outside the school day was devoted to creating a product to display in the Invention Convention. Students were not allowed to form partnerships for this assignment therefore eliminating the need to collaborate online.The facilitator's goal of allowing student directed learning opportunities to surface was quickly overshadowed by a race to complete individual displays and products before a deadline. Because of these factors the online component did not result in a flexible delivery system. Online opportunities became extra items attached to a compressed unit.

Research question number three asked if online instruction would meet the goals of the *Inventors and Their Inventions* unit. As the researcher and talented and gifted teacher met to outline the unit it became apparent that some of the objectives of the *Inventors and Their Inventions* unit could not be accomplished through an online format. The talented and gifted teacher was not comfortable eliminating face to face meetings for the duration of the unit. Because she had not previously participated in an online course her vision of the utility's potential was limited. In retrospect, the researcher believes that an entirely new content area should have been used to create the online unit with all collaborating teachers equally committed to using a student centered approach to learning with the teacher as visible model and facilitator. Research involving the use of computer technology for learning has consistently demonstrated the significance of the teacher, not only in teaching, planning, and instruction, but also in serving as a model for the students (Kromhout & Butzin, 1993). Teaching an online unit was not as simple as adapting traditionally delivered content to a new format. The unit that evolved was not an independent online course, but rather a weekly face to face group meeting with a web-based communication component. The researcher felt that much more could have been done via the online course, but time constraints, student/teacher interest, and lack of disciplined access to the course impended further progress. The results of this study causes the researcher to speculate about the general maturity of elementary students to effectively participate in online instruction.

The use of online instructional units should be pursued for this age/ability group with several changes. The unit should be presented totally online with weekly group meetings suspended for the duration of the course. A mini unit focused on navigation, threaded discussion techniques, and skimming and scanning textual information on a page should precede content delivery. This would dissipate the discomfort of learning to navigate within the site and focus the attention of the students and teacher on content and meaningful discussion contributions. The researcher recommends that online components be kept to a minimum possibly using only private mail, not threaded discussion, for communication. An alternative software system should be explored; one that employs more graphic appeal to this age group. The unit should be designed specifically for online delivery not an adaptation of standard classroom curriculum. The structure of the unit should be deliberately mapped out in advance by the teacher yet focused on student centered learning. Online collaboration must be an essential foundation for all assignments with a minimum number of required postings. The course objectives should be clearly defined and understood by all teachers involved in the unit. To encourage flexible access a parent meeting should be held to elicit support for the students outside the school setting.

Recommendations

Continued study of the effectiveness of online instruction with elementary students of all ability levels could be pursued in a variety of ways. This research project could be modified with recommended changes and repeated. A subsequent project could target a group of average ability students rather than talented and gifted students. This delivery method could be tested with 6th and 7th grade students to determine if they would exhibit greater maturity in an online setting. Online instructional projects could be tested by a classroom teacher functioning as designer and visible instructional model.

Reference List

As Web turns 10, its inventor tries to keep it simple. (2000, December 25). Quad City Times, p. B-4.

Boverie, P. (1997). Live vs taped: new perspectives in satellite-based programming for primary grades. [Online]. Available: ERIC

Cavanaugh, C.S. (1999). The effectiveness of interactive distance learning technologies on k-12 academic achievement. [Online]. Available: ERIC

Cognitive Abilities Test Form 4. (1954-1986). Chicago, IL: Riverside Publishing Co.

Department of Health, Education, and Welfare. (1971). Education of the gifted and talented. Washington, DC: U.S. Government Printing Office.

Draves, W. A. (1998). Developing online courses. Manhattan, KS: LERN.

Draves, W. A. (2000). Teaching Online. : River Falls, WI: Learning Resources Network.

Ewing, J. (1997). Superhighway Teams Across Rural Schools (STARS).[Online] Available: ERIC.

FirstClass [Computer software]. www.firstclass.ca

Gallagher, J. J. (1992). Gifted persons. In Encyclopedia of educational research. (Vol. 2, pp. 544-545) .

Herman, L. (1999). Difficulties bring wisdom: online learners learn how online communities learn. [Online] Available: ERIC

Information power: building partnerships for learning . (1998). Chicago, IL: American Library Association and the Association for Educational Communications and Technology.

Inspiration [Computer software]. Inspiration Software, Inc.

Iowa Tests of Basic Skills Forms K L and M. (1955-1996). Chicago, IL: Riverside Publishing Co.

Keegan, D. (1988) "On defining distance education." In Distance education: international perspectives. Routledge: New York.

Kromhout, O. & Butzin, S. (1993). Integrating computers into the curriculum : An evaluation of nine project CHILD model schools. Journal of Research on

Computing in Education, 26, (1), 55-69.29

Lau, L. K. (2000). Distance learning technologies: issues, trends, and opportunities. Hershey, PA: Idea Group

Ludlow, B.L. (1998). Distance education and tomorrow's schools. Bloomington, Indiana: Phi Delta Kappa Educational Foundation.

McKinnin, D. J. and Nolan, C. J. (1999). Distance education for the gifted and talented: An interactive design model. Roeper Review, 21 (4), 320-325.

Parker, M. J. (1999). Are academic behaviors fostered in web-based environments? [Online] Available: ERIC.

Schacter, J. (1998). Peer groups: is adult tutor/child learner always the optimal teaching and learning relation a culture provides? (Doctoral Dissertation, University of California, 1998). Dissertation Abstracts International.

Schrum, L. & Berenfeld, B. (1997). Teaching and learning in the information age: A guide to educational telecommunications. Needham, MA: Allyn & Bacon.

Structure of Intellect Learning Abilites Test. (1975-1985). Los Angeles, CA: Western Psychological Services.

Techencyclopedia. [Online]. Available: http://www.techweb.com/encyclopedia

VánTassel-Baska, J. (1998).Excellence in educating gifted & talented learners. Denver, CO: Love Publishing.

Washington, M. A. (1997). Real hope for the gifted. Gifted Child Today Magazine, 20, 20-22.

Watson-Glasser critical thinking appraisal. (1990). Psychological Corp.

White, K.W. (2000). The online teaching guide: A handbook of attitudes, strategies, and techniques for the virtual classroom. Needham, MA: Allyn and Bacon.

Wilson, B. G. and others. (1994). Technology making a difference: the Peakview Elementary School Study. [Online] Available: ERIC.

WebCT (Version 3.0) [Computer program]. (2000). World Wide Web Course Tools: Lynnfield, MA. [Online] Available: www.webct.com.

Detail Summary: Pre-Survey

Combined Results Return to Detail

Question: Pre-survey

Do you have a computer at home?

Responses: Answerbox 1

Response	Value	Frequency Distribution	
Yes	0%	5	
yes	0%	12	
no	0%	2	
Of course!	0%	1	
Yes, I do.	0%	1	

Combined Results Return to Detail

Detailed Statistics | Return to Detail

Question: Pre-survey question 3

Which of the following activities do you do on your home computer?

- ☐ 1. Browse the Internet
- ☐ 2. Listen to music
- ☐ 3. Search the library for books
- ☐ 4. E-mail friends and family
- ☐ 5. Do homework
- ☐ 6. Research
- ☐ 7. Instant message friends
- ☐ 8. Play games
- ☐ 9. Take a class

Response Summary

Answer	Value	Frequency Distribution	
1,2,3,4,5,6,7,8	0%	1	
1,2,4,5,6,7,8	0%	2	
1,4,5,6,7,8	0%	3	
1,4,5,6,8	0%	1	
1,4,6,8	0%	1	
1,5,7	0%	1	
1,8	0%	1	
2	0%	1	
4	0%	1	
4,5,6,7,8	0%	1	
4,5,6,8	0%	1	
4,5,8	0%	1	
4,8	0%	2	
7	0%	1	
8	0%	2	

Cumulative Response Summary

Answer	Value	Cumulative Frequency Distribution	
1	0%	10	
2	0%	4	
3	0%	1	
4	0%	14	
5	0%	11	
6	0%	10	
7	0%	9	
8	0%	16	
9	0%	0	

Detail Summary: Pre-Survey

Detailed Statistics | Return to Detail

Question: Pre-survey question 4

How would you rate your ability to use a computer?

- ○ 1. Beginner
- ○ 2. Still learning
- ○ 3. Good
- ○ 4. Expert

Response Summary

Answer	Value	Frequency Distribution	
1	0%	1	
2	0%	4	
3	0%	12	
4	0%	3	

Detailed Statistics | Return to Detail

Detail Summary: Pre-Survey

Detailed Statistics Return to Detail

Question: Pre-survey

How would you rate your comfort level on computers?

- ○ 1. I am very comfortable using computers.
- ○ 2. I am comfortable using computers.
- ○ 3. I am not comfortable using computers.

Response Summary

Answer	Value	Frequency Distribution	
1	0%	14	
2	0%	5	
3	0%	1	

Detailed Statistics Return to Detail

Detailed Statistics Return to Detail

Question: Pre-survey

How many times a week do you use your home computer?

- ○ 1. 0-5 times
- ○ 2. 5-10 times
- ○ 3. more than 10 times a week

Response Summary

Answer	Value	Frequency Distribution	
1	0%	7	
2	0%	8	
3	0%	5	

Detailed Statistics Return to Detail

Detail Summary: Pre-Survey

Detailed Statistics | Return to Detail

Question: Pre-survey question 7

Do you like using computers?

- 1. Yes
- 2. No
- 3. Don't care

Response Summary

Answer	Value	Frequency Distribution	
1	0%	18	
2	0%	1	
3	0%	1	

Detailed Statistics | Return to Detail

Detail Summary: Pre-Survey

Detailed Statistics | Return to Detail

Question: Pre-survey question 8

In my regular classroom I participate in discussion:

- 1. Never
- 2. Seldom
- 3. Occasionally
- 4. Often

Response Summary

Answer	Value	Frequency Distribution	
1	0%	0	
2	0%	1	■
3	0%	0	
4	0%	19	████████████████████

Detailed Statistics | Return to Detail

Detailed Statistics Return to Detail

Question: Pre-survey

Do you think a computer class will be a good way to learn?

- ○ 1. Yes
- ○ 2. No
- ○ 3. Don't know

Response Summary

Answer	Value	Frequency Distribution	
1	0%	15	
2	0%	2	
3	0%	3	

Detailed Statistics Return to Detail

Detail Summary: Pre-Survey

Detailed Statistics Return to Detail

Question: Pre-survey question 9

How do you most frequently communicate with your friends outside the school day?

- 1. Telephone
- 2. E-mail or Instant message
- 3. In person- at each other's houses
- 4. Letters or notes

Response Summary

Answer	Value	Frequency Distribution	
1	0%	10	
2	0%	4	
3	0%	6	
4	0%	0	

Detailed Statistics Return to Detail

More Detailed Statistics Summary: Post-Survey

Return to Detailed Statistics Summary

Information: Post-Survey

Question: Post-survey question 1

How would you rate your ability to use a computer?

1. Beginner 2. Still learning 3. Good 4. Expert

N	Mean	SD	Median	Mode	-	1	2	3	4
19	3.05	0.71	3.0	3	0 0.0%	0 0.0%	4 21.1%	10 52.6%	5 26.3%

Question: Post-survey question 2

How would you rate your comfort level on computers?

1. I am very comfortable using computers.
2. I am comfortable using computers.
3. I am not comfortable using computers.

N	Mean	SD	Median	Mode	-	1	2	3
19	1.26	0.56	1.0	1	0 0.0%	15 78.9%	3 15.8%	1 5.3%

Question: Post-survey question 3

Do you like using computers?

1. Yes 2. No 3. Don't care

N	Mean	SD	Median	Mode	-	1	2	3
19	1.05	0.23	1.0	1	0 0.0%	18 94.7%	1 5.3%	0 0.0%

Question: Post-survey question 4

Which statement best describes your participation in class discussions on the Inventor and Inventions bulletin board?

1. I contributed to discussions more often on the class bulletin board than I do in my regular classroom.
2. I contributed to discussions on the class bulletin board about the same number of times as I do in my regular classroom.
3. I contributed to class discussions on the bulletin board less than I do in my regular classroom.

N	Mean	SD	Median	Mode	-	1	2	3
19	2.32	0.67	2.0	2	0 0.0%	2 10.5%	9 47.4%	8 42.1%

Question: Post-survey question 5

I used the private mail:

1. Never 2. Once in a while 3. Daily

N	Mean	SD	Median	Mode	-	1	2	3
19	2.21	0.42	2.0	2	0 0.0%	0 0.0%	15 78.9%	4 21.1%

Question: Post-survey question 6

Which phrase best describes your thoughts about learning online?

1. I learned more through this online course than I would have in a classroom.
2. I learned the same amount through this online course as I would have in a classroom.
3. I learned less online than I would have in a classroom.

N	Mean	SD	Median	Mode	-	1	2	3
19	2.21	0.63	2.0	2	0 0.0%	2 10.5%	11 57.9%	6 31.6%

Question: Post-survey question 7

Did the opportunity to talk to your SAIL classmates online:

1. Improve your friendships with them.
2. My friendships stayed the same.
3. I made a new friend.
4. Talking online had no impact on my friendships with SAIL classmates.

N	Mean	SD	Median	Mode	-	1	2	3	4
19	2.00	0.94	2.0	2	0 0.0%	6 31.6%	9 47.4%	2 10.5%	2 10.5%

Question: Post-survey question 8

Would you like to take another SAIL unit on line?

1. Yes 2. Maybe 3. No

N	Mean	SD	Median	Mode	-	1	2	3
19	1.32	0.58	1.0	1	0 0.0%	14 73.7%	4 21.1%	1 5.3%

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 1

How would you rate your ability to use a computer?

- ○ 1. Beginner
- ○ 2. Still learning
- ○ 3. Good
- ○ 4. Expert

Response Summary

Answer	Value	Frequency Distribution	
1	0%	0	
2	0%	4	
3	0%	10	
4	0%	5	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 2

How would you rate your comfort level on computers?

- 1. I am very comfortable using computers.
- 2. I am comfortable using computers.
- 3. I am not comfortable using computers.

Response Summary

Answer	Value	Frequency Distribution	
1	0%	15	
2	0%	3	
3	0%	1	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 3

Do you like using computers?

- 1. Yes
- 2. No
- 3. Don't care

Response Summary

Answer	Value	Frequency Distribution	
1	0%	18	
2	0%	1	
3	0%	0	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 4

Which statement best describes your participation in class discussions on the Inventor and Inventions bulletin board?

1. I contributed to discussions more often on the class bulletin board than I do in my regular classroom.
2. I contributed to discussions on the class bulletin board about the same number of times as I do in my regular classroom.
3. I contributed to class discussions on the bulletin board less than I do in my regular classroom.

Response Summary

Answer	Value	Frequency Distribution	
1	0%	2	
2	0%	9	
3	0%	8	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 5

I used the private mail:

- 1. Never
- 2. Once in a while
- 3. Daily

Response Summary

Answer	Value	Frequency Distribution	
1	0%	0	
2	0%	15	
3	0%	4	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 6

Which phrase best describes your thoughts about learning online?

- 1. I learned more through this online course than I would have in a classroom.
- 2. I learned the same amount through this online course as I would have in a classroom
- 3. I learned less online than I would have in a classroom.

Response Summary

Answer	Value	Frequency Distribution	
1	0%	2	
2	0%	11	
3	0%	6	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics Return to Detail

Question: Post-survey question 7

Did the opportunity to talk to your SAIL classmates online:

- 1. Improve your friendships with them.
- 2. My friendships stayed the same.
- 3. I made a new friend.
- 4. Talking online had no impact on my friendships with SAIL classmates.

Response Summary

Answer	Value	Frequency Distribution	
1	0%	6	
2	0%	9	
3	0%	2	
4	0%	2	

Detailed Statistics Return to Detail

Detail Summary: Post-Survey

Detailed Statistics | Return to Detail

Question: Post-survey question 8

Would you like to take another SAIL unit on line?

- 1. Yes
- 2. Maybe
- 3. No

Response Summary

Answer	Value	Frequency Distribution	
1	0%	14	
2	0%	4	
3	0%	1	

Detailed Statistics | Return to Detail

Invent Iowa Reflection Jan. 2001

Question:
What are your thoughts about being a student inventor?

I thought that at first it's hard, but when you get used to it, it's fun.

It is hard.

I THINK IT IS PRETTY COOL BEING AN INVENTOR AT SUCH A YOUNG AGE.
I HOPE WHEN I'M OLDER I COULD REALLY PUT IT ON SALE!!!

I think it's great that I am a student inventor i love to come up with new things and invent stuff. I am really glad my invention turned out well

Nothing wierd, It just seems like an assignment. The fith graders do it every year. The sail students do it every year but I thind it would be just as neat to invent something when you're an adult but it is col to invent stuff.

I thought that being a student inventor was fun.

It is very fun but also very challenging. I always like to think and this involves a lot of just that. My friend and I are also going to make another invention outside of school because shelives in Davenport.

I think it would be pretty hard to be an inventor.It would be pretty cool to get famous from an invention though.

I was really surprised, because most eleven year olds aren't inventors.

I think being a student inventor is a great chance for me to try something new.

I like it! It is fun and it realy makes you think! When my invention was one two win it made me feel proud!

I think it was fun and I will continue to think of things even though the Invention Convetion is over. I also think kids are as good as adult inventors.

I liked Inventing and being a STUDENT INVENTOR was fun. I wish that next year we would do the same thing.

I think it is very fun and challenging. I think we should continue doing it.

I like inventing because I can solve problems that I, or other people, have. It's fun to come up with ideas and acctually make it!!

I enjoyed participating in the Invention Convention and I am happy that we had it. I liked thinking up all of the ideas and making the finished product and the poster board.

I like it alot because I like to make up new things.

I think it's fun to know that I came up with something that has never been invented. I like to think 30 years from now how would it make a difference if it was invented. It would be cool to see how many people would buy it.

I thoufgt It was fun to fe an inventor and use my creativity.

It was fun! It was also very interesting too. I learned that sometimes an inventer can need help sometimes, espeicaly if you are too young to do some of the things.

Question:

What did you enjoy about the Invention Convention?

I liked seeing the other peoples' inventions.

I thought it was funny.

I ENJOYED LOOKING AT OTHER PEOPLE'S INVENTION, AND GIVING THEM COMMENTS.

I love the antisapation the excitement and frustration plus there were a lot of good thng sto eat!!!!! I am really proud of myself that I got into regonals.

The cookies. I also liked seeing my friends from camp. It was fun to see all the other inventions.

I enjoyed everyone's presentations.

Getting to see what problems can be solved by kids my age and seeing what goes on in other people's minds.

It was fun. It was nervously exiting.

I really enjoyed everything even my presentation. I liked the presentations the most though.

I enjoyed the helpful judges and that pretty much everyones parents were there.

I felt comfortable in front of thejudges! I'm glad I was with my friends! I think that everyone did a great job! I also think that it is very important to smile!

I enjoyed how we got to actually make our invention and compare it to others.

I liked the presentation and the student comments. I also liked the judging process. I can't wait until the next round.

I liked looking around at the other kids inventions.

I really liked looking at other people's inventions and comparing them with mine. I also liked the reception after wards.

I liked seeing all the other good inventnions. I don't think I could have chosen just a few togo onto regionals because there were so many good ones.

I enjoyed having the time to share my ideas with others.

I liked to look at everyone else's ideas and what they came up with and what their needs were. Everyone had good ideas.

I liked being able to use my creativity and hear other people's in invetions.

All of it! I liked the people that came up to me or my mom saying that my invention was cool! I was a little nervous when I had to do my presetation though.

Question:

What did you learn from going through the inventing process?

I learned nothing, I guess.

Inventing is hard.

IT IS NOT EASY TO INVENT OR TRY TO THINKN OF SOMETHING TO INVENT!!!!!

That kids can really invent stuff and grownup aren't the best inventors in the world!!

record everything you try and try everything you thind of. Try to finish everything a while before it's due.

I learned it might not work the way you want it to.

You have to think very hard to think of a solution that most everyone faces but never really thinks of an answer for it.

It is hard work. There are a lot of papers to fill out.

I didn't learn anything this year, because I did this last year.

I learned how to invent an item by going throgh the inventing process.

That you have to think of how it is going to work.You also have to remember to get all of your supplies before you start to make it!

That all good inventions start with a problem or a marketing idea and we have to add and take away from ideas until they make the perfect product.

I learned about others problems. I also learned that just sitting and thinking doesn't help and that it takes work for ideas.

I learned it looks easier than it really is, and you have to put alot of time into your invention.

I learned a lot about how to come up with ideas and get your "creative juices" flowing. I also learned a lot about sewing because I had to make a sleeping bag.

Patience. I had to be patient to build my invention and I couldn't rush through things like usually do because they wouldn't turn out. I also learned to be proud of my ideas and not care what other people think about them.

That if you want to be an inventer do it part time!

I learned that it's not always easy to invent something. No matter how hard you try, it can never be perfect. There's always something you can improve.

THat you need to brain storm Idea's before you get hoked on one Idea (I learned that tolate).

I learned the steps that inventors had to take to think of there idea, making the invention, and seeing if the invention works.

Question:

(Complete the sentence) Next year....

I will not be in the invention convention unfortnatly.

I will do a better project.

I WILL INVENT SOMETHING EVEN BETTER THAN THIS YEAR. AND I WILL MAKE IT SOLVE A BIGGER PROBLEM!!!

I will try to make my new invention ten times better than the one this yerar and I hope it will be the best experiance ever!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Next year if I could i would invent something to prevent stress on your shoulders when you carry you're backpack. I will not be doing this next year I will be in 6th grade.

Next year I hope to invent a remote holder.

I am going to think of a problem that everyone faces and is harder to think of because the best answers for problems usually take the longest.

I will try to get into SAIL but I hear it is hard because you have to get As in Effort.

I will be excited to try out for SAIL of TAG in middle school.

I would like to participate in the invention unit again.

I will miss being able to perticipate in the ivention convention!

I will hold a Invention Convention of my own.

I want to do this again it was a lot of fun. I want to also do the online corse again

I would also like to do the invention convention.

Next year I will try harder to make my speech interesting. I will also make the real invention(not just a modle) if I can. I would really like to use it.

Next year I hope to participate in an invention convention again. I already have tons of ideas that I would love to se go to work. I really am looking forward to participating in it next year, if I can.

Next year I will get thinking earlyer so I have more time to build my model and my billbord. I think you should have a problems list on the internet program for us to put problems that we have on so we can get ideas faster.

Next year, I hope the invention convention will be just like this years. I thought it was really cool! I noticed a lot of kids were really nervous so it might be good to tell the classes everyone's a winner whether they go to regionals or not!

If we do an ivention convention my idea's would be a panacake fliper, a system that when you open one double door cuboard the other one opens too,and a spoon that you can get in the corners of a cup when your eating ice cream.

Next year, I wish that I could do it again, but I do not know if you do someting like the invention convention next year if your in S.A.I.L., I really hope they do because this a great exsperince!