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ABSTRACT

This evaluation report describes the first year of an innovative attempt by three Chicago-area high schools, IBM, and Ameritech to introduce computing and telecommunications resources into the educational environment. Information presented in this project report was gathered by the evaluation team in over 32 day-long site visits to the schools, where they interviewed participating teachers and administrators, observed daily classroom and special project-related events, and sat in on daily and special planning sessions by teachers. In addition, volunteer parents and students were interviewed in their homes. Two written surveys, the grades and attendance records of all participating students, and statistics for their classes were examined. The results of the evaluation indicated that advanced computing and telecommunications technology can be placed in the homes of students and used successfully in their education; communication is both the key and first step towards enlarging parents' interest and participation in their child's education; willing teachers and technologies can extend the school day and do away with the physical limitations of being present in order to provide help and answer questions; and schools need to take the time to learn about the potential partnerships between school, business and community that are necessary to make educational reform possible. Two project-related papers are appended: "School Structured Computer Learning Activities and Participation in Out-of-School Structure Activities," which was accepted for publication in the Journal of Research on Computing in Education, and "Causes Underlying Minimal Parent Involvement in the Education of Their Children," which was accepted for presentation at the 1992 meeting of the Mid-Western Educational Research Association. Both papers include references. (ALF)

Project Homeroom
First Year Experiences

A Status Report on the Project

in the

Maine East High School
New Trier High School
Amos Alonzo Stagg High School

September 30, 1992

by

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This report represents the combined efforts of many different people over the course of more than a year's worth of study. As Principal Investigator of the research I would like to personally acknowledge and thank each individual's contribution.

Mr. David Dwyer is (was) the Graduate Assistant assigned full-time to the Evaluation of Project Homeroom for our three schools. In this capacity David has been on virtually every trip into the field, has visited (and revisited) the library more times than he probably cares to remember, and has painstakingly entered, verified and helped to analyze much of the quantifiable data associated with this research. He has worked overtime, abovetime, and beyondtime (sometimes at his own doing) to see that the necessary tasks were completed in a more than just acceptable way. David, a "founding" student in the TIER Lab, came into the program to learn about "real" educational research. Dave - it doesn't get any more "real" than this!

Mr. James Kelly, Mr. Jerry Parsons, Ms. Teresa Nietzke and Mr. Mike Virlee are all Faculty Associates currently teaching at the University's Laboratory High School. Their expertise and years of experience in their respective subject areas brought a valuable dimension to the evaluation that could not have been obtained any other way. They have endured many long hours on the road, and many more hours in discussions about their observations, to bring the entire team insight on how the high school world works and how they perceive Project Homeroom to be operating within that world.

Ms. Sara Wills joined the evaluation team as part of a summer independent study to learn the process of textual analysis. I want to thank Sara for the huge amount of effort she put into coding and analyzing the written responses to our different surveys. I think she not only learned how to do it, but can probably teach me (and several others around campus) many things I am not aware of about the process. I wish her the best of success as she uses this experience in completing her dissertation and doctoral degree.

Special mentions are due to Shaure Wills (Sara's daughter) who spent a good portion of her summer vacation as our general data-entry clerk and typist. Shaure probably wants to forget all about Project Homeroom as she works to finish her senior year of high school. Good luck in volleyball, and I hope we can get you back to help with the next round of data! Nicole Soule, a new Graduate Assistant in the lab, is also to be thanked for helping write and read what little bits she could. Although busy in her own research project at the University's Laboratory High School she has continued to take an interest in Project Homeroom and to help whenever and wherever she could.

This team has spent the past year, from August 1991 through September 1992, learning about Project Homeroom from the fine teachers, students, parents, and administrators at Maine East, New Trier, and Amos Alonzo Stagg high schools. This is our chance to reciprocate by sharing with them what we have learned about their efforts. I can only hope that our work will prove, in their eyes, to be both complete and satisfying. I know I am quite proud of this team's efforts.

Jeffrey B. Hecht, Ph.D.
September 30, 1992

Executive Summary

Project Homeroom is an innovative attempt by several Chicago-area schools, IBM, and Ameritech to introduce state-of-the-art computing and telecommunications resources into the educational environment. This report details the first year's efforts of the Project in the Maine East, New Trier, and Amos Alonzo Stagg High Schools.

An evaluation team from the Technological Innovations in Educational Research Laboratory at the College of Education, Illinois State University, has been studying Project Homeroom in these three high schools since August, 1991. The team has conducted over 32 day-long site visits to the schools to: interview participating teachers and administrators, observe daily classroom events, sit in on daily and special planning sessions by the teachers, observe special project related events, and interview volunteer parents and students in their homes. Two written surveys, the grades and attendance records of all participating students, and statistics for their classes were examined.

Several very important results have emerged from this year long research effort. Highlights include:

- Project Homeroom is most frequently identified, for better or worse, as the students having a free computer and a private telephone line in their homes.

- The Project has fostered increased communications between students and teachers and between parents and teachers (through an openness on the part of the teachers to be available after school hours, the use of electronic mail and the additional telephone line, and more frequent meetings with parents).

- The core group of teachers is more in touch with their students as people, and more aware of what the other teachers in their group are doing (made possible through common student scheduling and time for daily planning meetings).

- Attempts to utilize an interdisciplinary approach and cooperative learning processes of education into the Project Homeroom setting were not as successful as teachers might have hoped (due to insufficient pre-planning time, late deliveries and/or working installations of necessary technology, insufficient training and learning resources for the teachers).

- Students elected to participate in the Project because of the free equipment and a chance to do something different in school, with their parents additionally hoping that interactions with the technology would aid their child in later life.

- Excitement at the beginning of the year tended to result in both students and parents reporting increases in their use of and comfort with the technology utilized in the project, although these gains tended to mediate and even regress by the end of the year.

- Both students and parents reported spending more time at the beginning of the year on school and technology related issues, although (again) this effect was

dampened by the end of the year. An interesting analysis of the relationship between engagement in outside of school activities and the potential for academic progress is presented in the appendix titled *School Structured Computer Learning Activities and Participation in Out-of-School Structured Activities*, a paper to be published in an upcoming issue of the Journal of Research on Computing in Education.

- Only a small percentage of the participants report continuing or unresolved problems with their computer equipment or telecommunications services (the printer tended to be the piece of equipment most in question).

- Grades for students participating in Project Homeroom tended to be below those obtained by non-Project Homeroom students taking similar courses and, not surprisingly, the Project Homeroom course grades (being the core courses like English, Social Science, Math, and Science) tended to be lower than the participating student's non-Project Homeroom course grades.

- Project Homeroom student's school attendance tended to be the same as or slightly better than their class/school as a whole. Although for the most part these differences are not statistically significant, this finding does suggest a potential for decreases absences on the part of participating students.

- The use of the computer equipment and telecommunications services, and the dedication and extra effort of the teachers, were most frequently cited as the benefits of this Project. Most students and parents disliked was the extra work involved to use the technology, reported a feeling that the technology was not being used to its fullest, and described constraints placed on students' elective schedules and their potential for social interactions in order to be with the core teachers and common groups of students for the Project classes.

The Project Homeroom effort in these three schools has modeled what one might expect from the first year of any large scale innovation. More time could have been used in planning and preparation before the start of the school year, and several of the key components - both technological and instructional - failed to materialize as planned. None the less, the Project has shown that it can place advanced computing and telecommunications technology into the homes of selected students and use it successfully in their education. It has shown that communication is both the key and first step towards enlarging parent interest and participation in their child's education (see in the appendix *Causes Underlying Minimal Parent Involvement in the Education of their Children*, a paper to be presented in October at the Mid-Western Educational Research Association). Project Homeroom has demonstrated that willing teachers and straightforward technologies can end the cycle of student academic frustration by extending the school day and doing away with the physical limitations of being present in order to provide help and answer questions. Finally, this effort shows us that educational reform, with the help of communities and business, is possible. Schools need only take the time to learn about their potential partners, understand their needs, and work towards common goals. It is for this potential that the evaluation team is looking forward to studying the second year of Project Homeroom.

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Project Homeroom
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Introduction

Project Homeroom is a collaborative effort on the part of six Chicago-area school districts, IBM, and Ameritech. The project places IBM personal computer systems into the homes of participating students, providing them telecommunications services for linking those computers to the schools and selected information provider services. Additional computer technology has also been established in each school, establishing a centralized platform for design and experimentation. Teachers and administrators have worked over the past year to find ways to integrate this technology into their instructional programs, using the technology as support for other curricular innovations. Specific initiatives have also been established to encourage the parents of participating students to become more active in their children's education.

Overall, this effort seeks to eliminate the "learning only occurs in school" outlook that many students encounter. Most American schools operate on fairly traditional schedules, with teachers and resources only available to students during the school day. Students desiring additional resources not usually found in the home, especially a desire to contact their teacher with questions or problems they might be encountering, were frustrated by the lack of resource availability. Project Homeroom addresses this issue in a major way by using the Prodigy (sm) service, in addition to school computer local area networks brought on line during the year, as a means for students to both communicate with teachers after hours and to access information not usually available out of the home.

The Project Homeroom effort also seeks to involve parents more in the education of their children. This is especially important in the three high schools being evaluated in this research, as parent participation is known to drop off dramatically during the high school years. Research done in elementary schools shows that increasing parent involvement reduces the risk of student problems and increases both academic and social performance (see the paper in the Appendix titled *Causes Underlying Minimal Parent Involvement in the Education of their Children* for a general review and discussion of this issue). Project Homeroom is using increased contacts between the teachers and parents, both on voice telephones and via Prodigy and the school networks, to maintain and increase parents involvement.

Finally, Project Homeroom has also allowed teachers and administrators to work together in order to rethink schooling. High School is often criticized because of the way it compartmentalizes knowledge, dividing it into specific blocks according to major subject areas. Often students learn each subject as a separate unit, with little understanding of how all of the knowledge fits together in a coherent whole. Teachers in this project have planned to use the technology as a means to reorganize the curriculum around conceptual models tapping many different specific subject areas. Enhanced by the technology, teachers and students are free to explore problem solving, creative thinking, and expressive writing and speaking.

Each school participating in Project Homeroom developed its own specific plan for designing and implementing the project. Although non were executed quite the way they were described, it is important to note the beginning orientation for each institution. The following summaries were extracted from school statements and planning documents developed early in the Project's life.

Project Homeroom at Maine East High School

Maine East planned to start the year with 100 freshman Homeroom students who would be committed to the program for the full two year term. Since most of the student live in the Centel telephone region, the Project Homeroom students were to be selected from a restricted area within the Ameritech region. The students will be drawn from the regular academic population.

The Homeroom curriculum will be interdisciplinary combining English, Math, Science, and Social Science. Plans call for each student to have access to computers both at home and in the classroom. The program will employ a 'project' orientation to learning. Students will be provided dial-up access to the school library and will be expected to download homework to the school via local area network. Teachers will also offer evening 'office hours' by computer.

Maine East is interested in studying the effects of Homeroom on learning style. They would also like to separate the effects of the interdisciplinary program from the effects of the technology.

Project Homeroom at New Trier High School

New Trier's version of Project Homeroom is being designed to use the capabilities of telecommunications technology to enhance the delivery of the tenth grade curriculum. A cross-disciplinary focus will unite a core program in English, Biology, Geometry, and Geography in Levels 2 and 3. Fine/Practical Arts projects are planned to be integrated into the core curriculum as appropriate. Seventy-five sophomores will be identified in each of two years to participate in the program. Parents of these students will be expected to be partners with their student in the project. Five New Trier teachers, two technical coordinators and two project managers will complete the cooperative learning teams. The pilot project will be initiated during the 1991-92 school year and replicated during the 1992-93 school year. Evaluation of the first year's implementation will provide data to improve implementation during the second year.

Students enrolled in Homeroom will learn the same curriculum as designed for all New Trier students enrolled in the same Levels 2 and 3 courses. The value of this project will be identified through the enhancement of the curriculum using telecommunications technology, cross-disciplinary and cooperative teaching. Another important component will be the benefits derived from a learning partnership forged and nurtured among students, parents, and teachers–both in and outside the classroom.

Project Homeroom at Amos Alonzo Stagg High School

Stagg will select 75 of the incoming 1991-92 freshman class for participation in its version of Project Homeroom. These students will be selected from the regular and basic academic populations. Furthermore, these students will be committed to the program for the entire two year period.

They will participate in an interdisciplinary curriculum that will cover three subjects: English, German, and World History. During the school year class size will be fluid, ranging from three separate classes of 25 students each to a single class of 75 students. The size of any particular class will be dictated by the needs of the curriculum.

Stagg will have ISDN phone lines in the homes and school. This will allow the students to share screens while communicate via telephone. The program will focus on collaborative learning and increasing parental involvement. Stagg is also interested in matched pair research.

Overview of the Evaluation Plan and Personnel

Dr. Jeffrey B. Hecht, a Professor of Education at Illinois State University, was secured as an external evaluator to examine the impact of Project Homeroom in these three schools. Dr. Hecht's team, consisting of a full-time graduate student, four faculty associates from the University's Laboratory High School, and part-time graduate students working on specific subparts of the project is based out of the Technological Innovations in Educational Research (TIER) laboratory in the Department of Educational Administration and Foundations, College of Education.

Early on it was recognized that simple attempts to quantify the impact of Project Homeroom on student learning and achievement would greatly underestimate and poorly describe its true value. For this reason the team designed a multimodal evaluation approach. Several different quantitative and qualitative methods were to be combined to ascertain program participation, academic performance changes, and attitudinal variations. Four key participant groups were identified and are being studied as part of this process: participating students, parents of participating students, participating teachers, and school-site administration. In addition, grades and attendance data were collected as an aggregate from their Project Homeroom students' class as a whole to be used for within grade level comparisons.

Unfortunately, final arrangements to use the ISU evaluation team were not concluded until virtually the start of the 1991-92 school year, even though curriculum planning and development activities and summer camps were already well underway. This challenged the evaluation team to quickly come up to speed in studying the effort, so as not to miss any more of the first year than necessary. The first priority of the team to get out into the field to meet with the different program participants, and to begin to observe the project's implementation.

On-Site Interviews and Observations

From the start of the project evaluation (the end of August, 1991) through March, 1992 the evaluation team has spent a total of thirty-two (32) days in the field gathering data on Project Homeroom: five days with Ameritech and IBM representatives, nine at Amos Alonzo Stagg High School, ten at Maine East, and eight at New Trier. These site visits have typically been a combination of different activities. Direct classroom observations allowed the visiting team members to see Project Homeroom components in action in the classrooms. Interviews, both individually and in groups, were also conducted with participating teachers and administrators to discuss what was observed in the classroom, the activities being undertaken and planned for the future, and different problems and praises as the project progressed.

Evaluation teams were able to visit several student residences in each school district to see the technology in use in the home, and to talk with both parents and students concerning their impressions of the project. In addition, an open "town meeting" was held at each school where parents were invited in to provide group impressions of the project and to hear a presentation (and ask questions) concerning the evaluation effort. An average of 87 people attended each of the meetings, voicing their input on the effort.

All of the on-site experiences for this project, with only a few exceptions, are being video taped to aid in the process of data analysis. While video is not new to evaluation studies and qualitative data gathering the unobtrusive size and high quality afforded by newer technology allows the research teams to gather a wealth of data previously unimagined. These audio-video segments are also extremely useful for summarizing and communicating the research findings. To date two short (seven minute and fifteen minute) presentations have been created in conjunction with the study, summarizing a reporting findings.

Written Surveys

In addition to the direct observation and interview techniques the research team has also asked each participant (student, parent, teacher, and administrator) to complete continuing comprehensive written surveys. The first survey, administered in January/February, 1992, established a database of personal characteristics and technology history for each respondent. This survey queried each individual about their prior (pre-Project Homeroom) technology experiences, and specific behavioral and attitudinal changes that have occurred since the beginning of the project. A second written survey was administered to students and parents near the end of the 1991-92 school year. Copies of these surveys are included in the Appendix.

All of the survey instruments utilized both open-ended and closed-form questions. Open-ended questions were utilized on both instruments to gather information about:

1) knowledge of Project Homeroom,
2) opinions of Project Homeroom and the addition of technology to the school curriculum, and

3) understanding of technology and available resources, including people and software.

Of particular interest was the use and interaction of technology and people in the learning process. On the first survey questions concerned expectations for Project Homeroom for the coming year, technological problems and concerns, and initial impressions of the Project. The second survey asked about aspects of this new educational experience. Both surveys requested responses about technology use and problems, problem resolution, perceptions of the staff and Project in general, and for positive and negative feelings about the Project. Respondents were given the opportunity to offer improvement suggestions for Project Homeroom in the future.

Of the 243 student/parent pairs surveyed, 471 individuals returned the first survey instrument (97%) and 449 returned the second instrument (92%). The first questionnaire included nine open-ended questions, while the second included seven questions that were open-ended. In both cases individual responses, which were generally one to two sentences in length, were often rich with detail that may or may not pertain to the question asked. In order to preserve the human ability of "listening" to what was perceived as being said, researchers coded every textual response into a computer maintained database regardless of whether it addressed the particular question being asked.

Numerical and categorical data from the surveys, along with the rates of response to the open-ended thematic questions, were analyzed using SPSS/PC+ (version 4). Flextext (version 2.1) was the selected computer software used for developing an understanding of the textual open-ended responses. The textual responses were initially typed into a computer readable format using WordPerfect (version 5.1), and were then exported and coded into Flextext for analysis.

The research team began the textual response analysis by creating a "conceptual map". Developed concepts spoke directly to expected and actual responses, allowing the categorization of themes and ideas expressed by the respondents. Broad categories of response themes included positive and negative ideas about technology, main stakeholders within the Project, and curricular and involvement themes central to Project Homeroom. The "Textual responses analysis conceptual map" (reproduced in the Appendix) served as an outline as researchers read and considered individual verbatim responses for coding in Flextext.

All concepts were considered for all respondents, schools and questionnaire items. During the actual coding of responses, new concepts were occasionally added but not removed from the conceptual map. All responses were coded at least one time. Many responses held more than one concept and were coded for all written ideas and richness of detail. Tables totaling the number of respondents indicating a concept one a question (by survey and by school) are presented in the Appendix for detailed review. Such a review requires that readers be aware that these conceptual response totals will not equal the total number of respondents, since frequently respondents provided more than one codable concept in answer to a survey question.

Attendance and Grade Records

Student attendance and academic records were also examined as part of the evaluation effort. Prior academic folders were obtained and reviewed on each student during the first several months of the project. First semester grade reports were added to this list during January/February of 1992 with end of year data added during the Summer of 1992. Relevant components of this information were coded into a master computer database for comparison to written survey responses and interview records. Naturally, anonymity of this confidential data is a high priority, with all records (paper and computer) maintained in a restricted access environment.

Advice for Readers of This Evaluation Report

The combination of evaluation efforts applied to the study of Project Homeroom have revealed several key findings. In the review of these findings, however, several important cautions must be noted. First, the data gathered thus far represents information available from the first twelve months of program operation. As such it is indicative of the first year of the two year effort. In Project Homeroom, as in many efforts of this magnitude, there are significant issues to be addressed that sometimes hamper a full or smooth implementation, or interfere with the implementation in the sequence and schedule that was planned. Some of the following data describes the issues dealt with in the start-up of Project Homeroom in these three districts – issues which might not be relevant in later years of operation or to other schools planning a similar effort.

Second, this report represents an presentation of data from all three high schools under study. While each site is implementing its own unique version of this project sufficient similarities exist between to allow for a single method of evaluation applied to all three sites. It is not the intent of this evaluation to compare one school site against another, or one teacher to another, as too many other important differences already exist between the schools as to make such a comparison meaningless. Whenever possible, the insights garnered from all schools are discussed in the whole. Only factors found existing in a single school site will be attributed to that site within this report, and always in a way that protects the anonymity and sensitivity of the participants.

Multiple factors enter into the execution of any component of this project. This summary of findings will discuss what has been learned thus far from the project, with plausible potential explanations for both the gains and reductions forwarded. It is also not the intent of this evaluation to ascribe project successes or failures to any single cause(s) or person(s); rather, we seek to present the data that has been gathered and to analyze it in a way that provides for useful future program improvement. This study is not an evaluation of teachers, administrators, parents or students. It is, though, a study of how the process of Project Homeroom has been implemented, and what improvements have been noted in conjunction with that implementation.

Finally, it should be obvious that all possible data cannot ever all be collected, analyzed, or explained in any one single report. Many very interesting insights developed in the course of examining Project Homeroom that cannot be adequately

described in print, let alone in the numerous pages this report required. This work represents the best efforts of the team of researchers to present what we feel to be the most important of the data that we have been able to analyze at this point in time. We are continually in the process of collecting more and more information about the process that is Project Homeroom. It is our hope that further reports will be able to expand on, and add to, the wisdom we will present here.

What is Project Homeroom?

Before one can begin to talk about a thing one must be sure what the thing is they want to talk about. Such is the case with Project Homeroom. In order for us as evaluators to discuss what we were observing in this thing called Project Homeroom we needed to understand, from the perspectives of those both doing and participating the Project, what this Project entails. Since this is a both the first and critical question in any evaluation we used a number of different approaches to arrive at our understanding.

The first way we learned about Project Homeroom was to read about it, using the literature produced by the three schools and two corporations. We then interviewed as many of the planners as we could, including: teachers and administrators in each of the schools, representatives from the corporations, students, and parents. We then began to attend classes with the students, learning about Project Homeroom by watching it in action in the classroom. These observations were checked with the teachers in periodic group meetings and personal interviews, and with the students and parents in selected home visits. All of our interviews, meetings, and classroom observations with video taped, in addition to our taking hand written field notes. These video tapes were later carefully indexed and reviewed for the purpose of double-checking the accuracy of our observations. The video tapes also helped us develop patterns of response, behavior, intent, and action by cross-linking observations from one date to those taken on another date that dealt with the same concept. While time consuming this process of viewing and reviewing, checking and linking, allowed the research team to validate conclusions in several different ways before they were presented in this report.

We also included several questions on both of the written surveys to ask all of the students and parents their opinions about what is the Project. The first survey included two questions aimed at clarifying what students and parents believed was Project Homeroom. Two questions on the second survey were aimed at exploring the perceived use of and interdisciplinary model of instruction and the use of collaborative learning, both concepts referred to frequently by participating teachers as ideals for the Project. The responses to these questions were coded into the Flextext software and analyzed using the conceptual map previous developed. Total counts of responses in each conceptual category, broken down by school and by question, are presented in the Appendix.

Although not executed in this order, we begin the presentation of what is Project Homeroom with a review of the first two survey questions given to students and parents. Asked near the beginning of the program, these questions organize the desires and expectations of the participants in this effort.

Question 1/1: What did you think Project Homeroom was?

Maine East: Students

The first question asked students to explain their impressions of Project Homeroom before they actually started the program. Admittedly, 18.5% of those who gave a response did not know anything about the Project. One student said, "I thought

it was going to be about homeroom. Project Homeroom is a misleading name." Other students thought the program would teach them how to use the computer (13.8%), thought they would receive free use of a computer (12.3%) or thought they would do their school work on the computer (10.8%). A number of respondents thought the Project would deal with computers in some way, increase their level of communication with teachers and the school or be a lot like regular school. "I thought it was when you get a computer in your home and get to call the school if you need help" stated one student.

Maine East: Parents

Like the students, the parents of students in Project Homeroom were asked about their perceptions of the Project before it started. Twenty five percent did not know anything about the Project. Another 15.2% thought it had something to do with doing school work on the computer and another 15.2% thought it would increase communications between the home and school. Other respondents related the Project to learning about the computer. Parents saw the program as "basically for homework" or as a way to "combine different subjects into one area just as in the real would." Another parent saw it as a way "to motivate her (daughter) to want to study and to teach her in a new and exciting way."

New Trier: Students

New Trier students were also asked about their perceptions of Project Homeroom before the school year started. Of the seventy students who answered the question, eight (11.4%) admitted that they did not know what the Project was. Of the rest of the respondents, 22.9% thought they would learn about computers and 18.6% knew about having free use of a computer. Another 31.4% thought that school work could be done on the computer and 11.4% thought the Project sounded like fun. The Project was described by students as being able to "combine school and the use of the computer," or as "a program that integrates the use of computers into our academic schedule." Another student thought Project Homeroom would be a "teams project where everyone worked together." This may be a reference to the TEAMS label, another name for Project Homeroom at the New Trier High School.

New Trier: Parents

The response rate for this first question was low. Of the 19 who responded six (29.2%) thought the Project had to do with learning to use the computer, five thought students would do school work on the computer, five others talked about increasing communications with the school, and others mentioned student performance, improved grades and the connection of the project with technology. One parent summarized his/her thoughts, saying, it is "a creative experiment in computer use and the ability to put huge amounts of data in front of the student." Another called it "an opportunity for students to use technology as a tool for learning."

Amos Alonzo Stagg: Students

In response to the first question which requested information about perceptions of Project Homeroom before the school year started, 18.4% saw it as a way to learn about the computer, 14.5% as a way to get a free computer, and 15.9% to do school work on the computer. One student said, "I thought it would be that the students would use the computer just to communicate with other students and access information." Another saw the Project as "a big commitment to use the computer for three years - lots of work." Still another student stated, "I thought it was going to be fun but it's not."

Amos Alonzo Stagg: Parents

14.3% of Stagg's parents felt confident that they knew what the Project involved. Others saw the Project as a way to improve communications with the school (30.1%), a way to make school work fun (8.2%), or for students to do their school work on the computer (12.2%). Quotes from parent surveys speak of "helping my child in the future," and providing a way to increase the "ability to learn using advanced technology in combination with highly interactive instructions to access and share information from a variety of database sources." Other parents talked about "kids working together with computers and teachers;" and about "using computers to communicate with others."

Question 1/7: How would you describe Project Homeroom?

Maine East: Students

The seventh open-ended question on the first survey requested students to give a description of Project Homeroom as if they were explaining the program to a close friend. "It's more fun and makes homework more interesting," was an example of the kind of response received, along with, "It's a program that helps you learn about a computer and you have most of your homework revolving around the computer." Of the students who described the Project, 33.9% talked about learning to use the computer and another 33.9% about getting a free computer. Many of the other students discussed increased communications with and access to teachers (19.6), learning to do school work on the computer (30.4%), the potential for improved grades and motivation and a general good impression about the Project (25%). The Project was also described as being too hard, unorganized or just plain boring by 12.5% and two respondents saw the Project as an "experiment."

Maine East: Parents

When asked to describe Project Homeroom as if to a close friend, parents said things like, "It is like having a library, school, office and telephone all at your fingertips. I think it is a wonderful idea." Another parent stated that "It will be useful to have the computer at home which will help students learn about computers." Still another parent described the Project as being like "going to school with a computer." In response to this survey item 32.1% described the Project as a way to increase communication with the school. Other responses described students doing school work on the computer (17%), improving student motivation (18.9%), learning to use the computer (15.1%),

receiving free use of a computer (11.3%), and improving the student's future (9.4%). While many parents (18.9%) described the program as generally good, one parent remarked that the Project was not turning out to be what it was supposed to be.

New Trier: Students

To describe Project Homeroom to a close friend, students talked a lot about doing school work on the computer (27.4%), that the Project was fun and interesting (26.8%), about the free use of a computer (24.7%), about how hard the work is (17.8%) and that one would learn to use the computer (16.4%). One student summarized the Project by saying, "Homework and school work are almost always related to the computer, and if you have any problems you are in contact with your teacher." On the negative side, a student commented that it "gets kind of boring with the same people."

New Trier: Parents

When asked how they would explain Project Homeroom to a close friend, one parent described the Project "a wonderful training tool." Another parent defined it by saying, "You learn how to use a computer. Your child is connected to school and if he or she had a problem there is always a teacher or a student that can be reached." Seven of the 18 parents who chose to answer the question discussed increased communication with the school or the improvement of students' communication skills in general. Four parents talked about learning to use the computer or the improvement of student motivation and school performance. Three liked the Project as something fun and interesting to do. Others described doing school work on the computer, improved grades, preparing the student for the future, having use of a free computer, or chose to describe the Project as a combined corporation and school effort.

Amos Alonzo Stagg: Students

One student at Amos Alonzo Stagg said, "I would tell them it is a learning experience that can help you to learn about the computer and that you learn about communication with other people. You meet a lot of new people and you learn how to work and get along with others." Another student stated that the Project offers "variety and fun." Still another student was not quite so positive in saying "it's supposed to be a computer program but we hardly ever use them." Survey responses described the Project as offering free use of a computer (36.2%), and 29.5% of the respondents saw computers as active in the teaching of students. Learning to use a computer was part of the description offered by 15.1% of the respondents and another 15.1% described using computers to do school work.

Amos Alonzo Stagg: Parents

To explain Project Homeroom to a close friend 46% of the parents talked about increased communications with the school, 18% as a way to improve the student's future; 18% discussed improved student learning and another 18% described the Project as a combined effort between the school and a corporation. Parents described the program as "almost like bringing the school to home" or as a "computer utilized

technique for learning both in and out of the classroom." One parent made an interesting suggestion about the presentation of the program, "I would have students explain it" (indicating later on that this program was for the students, not for the parents).

What did we observe at the schools?

The second way in which we determined what Project Homeroom was occurred by gathering data through personal interviews and direct classroom observations at the three schools. These visits were videotaped, indexed, logged, and analyzed to identify trends and themes present in each school's implementation. Four teachers from Illinois State University's University Laboratory High School were included in the evaluation team to function as subject area experts. These teachers represented the areas of English, Social Science, Physical Science and Industrial Technology, and Mathematics. Our subject area experts made contact with their subject area counterparts at each of the high schools. Throughout the year, the evaluation team teachers and the Project Homeroom teachers kept in touch by telephone and in-person interviews and discussions. The following pages describe the observations these teachers made regarding each school's implementation of Project Homeroom.

Maine East

Maine East initially envisioned an interdisciplinary curriculum involving Math, English, Biology, and World Cultures. The students were to be given access to computers both in school and at home, and access to various on-line information retrieval systems. Students were expected to access the school library from home, download homework assignments, and upload the completed work using the school's local area network. The teachers were also to offer evening "office hours" by computer electronic. An integral part of the Maine East Homeroom staff's vision was the curriculum being implemented through a "project-oriented" approach. Accordingly, the teachers at Maine East planned for three projects throughout the course of the first year.

The first project attempted by the Maine East teaching staff focused on showcasing the students taking part in Project Homeroom at Maine East. Students interviewed each other and this general information, along with descriptive physical information and a digitized photograph, were to be included in a Linkway portfolio (Linkway is an IBM multimedia authoring system). The second project was entitled "Freshmen Through the Ages." This project intended for the students to research the history of freshmen at Maine East High School from 1902 until 1992. Students were going to compare and contrast freshmen in terms of their culture over time. The third project was going to link the Project Homeroom students to the world at large. Its intent was to show the significance of each person and the part he or she plays in the world.

Unfortunately, the first project was the only project fully completed. The second project was attempted, but had to have its focus re-aligned and its scope limited to freshman in Maine East during the current year. The school year ended before the third project was even attempted. Discussions with the teachers indicated delays in hardware and software installation as the primary reason underlying this reduced accomplishment. With computer hardware and software not fully operational until mid-way through the

year many of Maine East's plans could not be executed in the manner designed. Further, the teachers reported insufficient time to learn and integrate these new technologies into their curriculum. The combination of these two factors resulted in the teachers doing their best to accomplish these projects, and to use the technology in other ways. It is apparent, though, that they could not overcome the inertia generated by a late start and unfamiliarity with the computer and telecommunications equipment and software.

Everyone on the Project Homeroom team at Maine East seemed very excited and anxious to begin the school year and start using the technology. Experience with technology varied widely among each of the teachers. While one teachers was frequently observed working with the computers in spare moments, another was often heard to remark, "I didn't even know how to turn the machine on when I started. I've never worked with computers before." With virtually no time to become familiar with the equipment and multitude of instructional software available much of the staff seemed to be working extremely hard just to keep up with their students.

A common saying heard at Maine East was the phrase, "We don't want the technology to run the curriculum." Unfortunately that is exactly what seemed to happen. The majority of the staff meetings we attended had technology as the major topic. At the beginning of the year there were numerous delays in delivering systems. These difficulties were compounded by the endless train of broken equipment, wrong parts, accidentally deleted operating systems, and numerous other start-up related problems. Perhaps the most significant difficulty encountered by the team was the lack of a local area network until late in the first year. Much of what the teachers had envisioned rested upon the students having a capacity to dial into the school's local area network from home. Without this capability, the transfer of homework assignments, an on-line gradebook, and access to school based applications software were unavailable.

The teachers were forced to alter their original conceptualization of how to implement Homeroom at Maine East to accommodate delivery delays and other start-up "bugs". Teachers made copies of various "canned" software for students' use at home. Students completed assignments at home and turned them in on a floppy disk. Communications between home and school most often took the form of telephone voice communication or electronic mail on the Prodigy service (a feature that was not intended to be used at the extent it was). One fortunate serendipitous discovery was Prodigy's game "Where in the World is Carmen San Diego?". The World Cultures teacher was able to integrate this on-line game into his classroom activities via take home worksheets and assigned on-line activities.

Through school and home visits we observed students using the computers primarily for word processing. The Biology teacher was able to show his students large images through a microscope via a television monitor mounted high up in the corner of the room, an interesting use of technology though not directly connected with the Project Homeroom effort. Specific examples of the teachers using the technology in the classroom included: PC-Globe/USA in World Cultures, an animated look a cells using Linkway in Biology, and an equation solving program in Algebra. None of these uses of technology, though, seemed to reflect the significant changes the teachers had initially discussed and planned to improve their courses. In one instance the use of technology

even proved vexatious to the instructional process. While the Algebra teacher was going through one of the problems to be solved a student asked a question about the use of the distributive property in the equation. The computer software being used did not fully explain how the distributive property of multiplication over addition generated the next step in the equation solving process. To answer the student's question the teacher raised the screen on which the computer was projecting, turned off the projector, and then carefully and thoroughly explained the distributive property to the student by using chalk on the blackboard. The student watched and listened to the procedure and was able to relate to the human process which was missing in the impersonal technology. From this example the only argument in favor of teaching with technology seems to be that technology is simply more interesting, and attention getting, than using books and traditional lectures.

No continuing examples of an interdisciplinary curriculum or cooperative learning were observed by the evaluation team. What we did observe looked mostly like standard classroom experiences: desks in rows, a teacher in the front of the room lecturing and students sitting passively in their seats. There were cooperative presentations in World Cultures class. This is not to say that interdisciplinary or cooperative events did not occur. Rather, the frequency at which they did occur tended to make them the "special events of the day" rather than the norm for educational delivery. This is a standard practice in many schools and cannot truly be used as an exemplar of an integrative, overarching innovative practice.

The words "interdisciplinary" and "cooperative learning" seem to apply much more to the teachers involved with Project Homeroom at Maine East than to the students. Indeed, the teachers made remarkable strides at tearing down the borders that are traditionally erected between academic departments. They planned the projects collectively and implemented them interdepartmentally. If nothing else the freedom to plan and communicate allowed the teachers to solve individual student problems in a much more timely manner.

Perhaps the most important outcome of Project Homeroom thus far has been a decrease in the distance normally found between teachers of different subject areas. It now appears acceptable for a Project Homeroom teacher to suggest an improvement to the Algebra class, or to find a way for two different subject area teachers to collaborate on a unit of learning, or to discuss problems a student might be having across several classes. In this first year five highly motivated, visionary people set out to do something new. During this year reality clashed with expectations. Undaunted, these teachers have communicated a hope that in this next year all of the technology problems will have been ironed out. This year of experience has given the teachers at Maine East a better understanding of how to use the technology and how the technology will be able to aid them in their task of teaching. Through realistic planning and a revitalized sense of purpose, Project Homeroom at Maine East will be something worth watching in the coming year.

New Trier

Project Homeroom at New Trier High School sought to intertwine Biology, English, Geometry, and Geography into a new and innovative interdisciplinary curriculum. New Trier included 75 regular academic sophomore students (level 2 and 3 students). In the second year (1992-93) these students are being replaced with another similar set of sophomores. New Trier's primary interest for Project Homeroom is to compare Homeroom students with other New Trier Juniors after the program to see if these students are better problem solvers. New Trier prides itself highly on the quality of its instruction and has, as a major project goal, pledged that the New Trier curriculum will be maintained for the Homeroom participants. They ways in which they integrate technology while maintaining their high standard is a challenge worthy of New Trier High School.

There was a great deal of evidence at New Trier regarding the use of the Project Homeroom technology in the school, classroom, and home. We observed that all classes connected with the project had at least one computer and wall-hung large computer monitor. In addition the science lab had five computers and a large monitor in the front of the room. This equipment was utilized on a regular basis in the science and social science classes. The science teacher used programs to generate images of cells and molecular structures. At other times, however, the computers were used more as "talking books." One such occasion was the use of some software that explained biomes in much the same way a movie or filmstrip might. Like a film presentation the students interacted very little interaction with the computer. The social science teacher used the technology as an electronic assignment board, displaying charts and data from PC GLOBE and teaching spreadsheet and graphing skills using Microsoft Works. It is interesting to note that the display monitor in the classroom was rather small and hard to read but the teacher overcame this potential problem by enhancing the size of the text displayed by using Express Publisher.

The English and Geography teachers worked together on a large assignment which involved each student developing and writing a single page newspaper. The computer was also used on this assignment but the formatting, style and form of the newspaper was extremely time consuming. Unavailability of software resulted in the majority of the formatting actually being done by the Geography teacher during her free period. Some students would use their free periods to put their papers in a readable and usable manner, but this was not the norm nor was there any evidence that it was expected. Although this project took more time than planned, the teachers felt it was very successful. The Geography teacher was especially pleased that the students could "see an end result". She was excited that "something useable" was an end product of their work. Both teachers were very positive about the progress of Project Homeroom, but both had put in a great amount of time completing this project for their students. It is unfortunate that the students could not have shared the learning experience gained by the teachers in completing the final formatted versions of the newspapers, and that the teachers had to put in so much extra time to demonstrate the capabilities of the software.

The structure and makeup of Project Homeroom at New Trier necessitated that the Geometry teacher have both "2" and "3" level students in his Geometry classes.

New Trier classes, especially mathematics, are organized into 5 to 6 homogeneous levels. Rarely, if ever, are these students mixed in mathematics. Such a mixture in Geometry seems to have caused the teacher problems in instruction, assignments, and testing. As a second year teacher, this mixture was definitely one that required extra time and planning to execute without detriment to the students, although we are unsure how it could have been avoided within New Trier's current delivery system.

As of the end of September 1991 the Geometry teacher reported little use of the technology. He had not yet been able to leave the traditional textbook approach and utilize the technology, although there were plans to use spreadsheets before too long. The classroom was informal and relaxed. He used the overhead to show an opening problem for the entire class to work on. He later used different colors on the overhead to help explain the confusion of overlapping triangles. His well-prepared examples and problems on the overhead gave many opportunities for the students to think about the basic ideas of the lesson. The overhead served as excellent focal point for the teacher and the students to discuss and apply the lesson's ideas, and our team found his lessons quite entertaining and energetic. The use of computer technology for this course, though, did not really occur until much later in the year.

Except for a brief mentioning in the coordinate geometry unit nothing was said about using the Project's technology in the classroom or in the student's home. There was no evidence of any interdisciplinary activities with or without the technology. Although all of the teachers used one level of technology in their classrooms, none could be considered unique to an interdisciplinary program or different from anything they probably did in past years of non-Project Homeroom instruction.

The Project Homeroom teachers at New Trier felt that the Project Homeroom office in the school was extremely helpful for meeting, communicating and planning. They often, however, reported feeling "cut off from our departments" and singled out as "special" by their peers. This distinction was by no means laudatory in many instances. At one interview during the Spring of 1992 these teachers all stated that the idea of working together was that most positive part of the project. All of the teachers were very excited not only about the technology but about the opportunity for cooperation among colleagues.

There are multiple examples of the team utilizing interdisciplinary methodology with each other, mostly during special events. During the summer they met at the Museum of Science and Industry in Chicago to work on a field trip. They tried to coordinate worksheets so that the students could make a connection. This same theme and method persisted throughout three additional field trips during the school year. In classes at school, however, traditional lecture-style teaching seemed to be the norm. Students sitting in their chairs, passively taking notes, attending to a lecturing teacher was a common observation in the New Trier classroom.

Another Project Homeroom effort included the Geometry and Biology teachers collaborating on a project that included the students learning about statistics in Geometry and employing that knowledge in a Biology genetics unit. The statistics were taught in

the Math class as an addition instead of the Math teacher coming into the Biology class. This was typical of the kind of interdisciplinary interactions that we observed.

Parents were in communication with teachers regarding grades and assignments utilizing the electronic mail system available on the Prodigy service. At the first meeting of parents in September the mood appeared to be one of questioning an uncertainty. Lack of printers, the network not being operational and a perceived lack of knowledge about the specific aims of the program all seemed to be problems. Parents were waiting for the promised connections with the school and the individual teachers. Mail and grades were expected to be available and were not. The length of the project and the permanence of the hardware was still a confusion. Parents expressed concern over the outcome of the project and the relationship of future learning and preparedness of future educational experiences (such as college entry).

At the Spring meeting the parents' major concern had shifted to the continuation of the Project. They felt that their children had received a unique and positive experience. They could not believe that New Trier would discontinue Project Homeroom with their children at this point and not continue this outstanding program into higher grade levels. The parents expressed the idea that possibly all the students at New Trier should be taught in this manner. Parents further expressed that these four teachers were outstanding, and believed that the Project and the technology was something that should go on for at least one more year. Many suggestions were given to combine English and U.S. History or possible Chemistry and Advanced Algebra. It was obvious that the parents either did not understand the agreement between New Trier, IBM, and Ameritech, the nature of New Trier's Homeroom Project, or that they felt so strongly in its impact as to want these kinds of changes.

The team at New Trier seemed to benefit most from the freedom to work together. Being removed from their department offices allowed them to penetrate some of the barriers erected between teachers. Unfortunately, the freedom to express interdisciplinary ideas to a receptive audience was bought at the expense of the teachers involved being alienated and at times denigrated by their peers for being part of a "special" program. Unfortunately in actual practice we observed very little of what is traditionally known as interdisciplinary education or collaborative learning. As in the other schools the program suffered from delays in the delivery of specific items of technology and the initial start-up challenges. This does not seem to have substantially limited the program since very little was attempted that would necessitate the equipment being functional. The addition of technology to the classroom and the home seemed little more than "something extra" (as described by one parent we talked with).

It is clear that the teachers involved with Project Homeroom at New Trier have a good understanding of interdisciplinary approaches. It is also clear that the New Trier team is made up of motivated, forward looking educators. They have made an excellent start but even they acknowledge that their efforts should not end with the accomplishments of the first year. New Trier has the ability to become truly innovative in its second year of Project Homeroom.

Amos Alonzo Stagg

Stagg's implementation of the Homeroom project envisioned the same 75 freshman students engaged in an interdisciplinary curriculum comprised of English, German, and World History. Specific to Stagg's program was fluid class sizes throughout the year. Depending upon the task(s) at hand Stagg planned that the student group could be separated into three classes of 25 students each or the entire group of 75 could be brought together. High speed ISDN telephone lines connected the students homes to the school. Unfortunately, these lines eventually proved to be a mixed blessing, as not all of the anticipated features materialized. Stagg was also interested in improving parent involvement with the school as well as focusing on collaborative learning. The Project Homeroom staff at Stagg were committed to their students attaining excellence. From the very outset of the program they pledged that, "No student will fail. We will not allow that to happen." On this last point the staff seemed almost consumed.

On our first visits there seemed to be no technology in place in the classrooms and little was mentioned about the equipment at home except to say that it did not work. Delivery problems and start-up difficulties plagued the Project throughout its first semester. The staff persevered. In place of an expected local area network being functional initial communications between home and school were carried out via electronic mail on the Prodigy Service and by voice communications by standard telephones. The level of communication between parent and teacher was perhaps the crowning achievement at Stagg. The teachers instituted evening "office hours" at home and were almost immediately buried in numerous and continuous telephone calls from students and parents. Eventually, the communications became so frequent the teachers began turning off their Project Homeroom telephones after certain times or using telephone answering machines.

A primary motivator for having the ISDN lines put in was the ability for individuals to interact via voice communication while simultaneously engaging in computer "screen sharing." Unfortunately the software that would enable this was never brought on-line during the first year. It was also explained by the Ameritech personnel that the way in which ISDN technology processes communications signals also made it prohibitively expensive for students to communicate this way. At the beginning of the year the school was always receiving complaints from parents about their telephone bills. Equitable solutions to the billing problems were eventually found, although the ISDN technology seems to have soured for the Stagg staff, students, and parents.

Throughout this first year of the program the evaluation team was bombarded with the message that innovation involves risks. We heartily concur with the sentiment; however, we observed very little genuine risk taking in the Homeroom classes at Stagg. In the majority of cases each class appeared to be a separate entity unto itself. In English classes the students typically sat with their desks in groups of four. This set-up changed toward midyear into a double rowed half circle arrangement. On one particular visit, the teacher read to the student the entire period from William Golding's Lord of The Flies. When asked, the teacher related to the class that the title "... had really very little to do with the story, kind of like in To Kill a Mockingbird." The German class seemed very strong and very effective but only in its single subject area of German. The World

History teacher seems to have attempted collaborative learning in his classroom, but it never progressed beyond having the students working in small groups to complete common group projects.

Midway through the year the school conducted "Project Igloo". This was an extension of a program usually done with Juniors at Stagg High School. The sessions are led by Seniors and the major thrust is to engage in and improve interpersonal communication as well as students striving to understand themselves. Project Igloo was a successful retreat focusing on enhancing group dynamics and building trust. It was an excellent way to show students and parents the school's sincere concern for each student. Twenty teacher and student facilitators made this project a personal and important component of the Stagg Project Homeroom students' experience.

The Project at Amos Alonzo Stagg High School could benefit from utilizing the schools existing microcomputer labs more often along with the addition of some computer technology in the classroom. They had the capability to use this technology on a daily basis either by installing hanging monitors or monitors on stands or by using an LCD screen and overhead projector. Even though the lab was available, the immediacy factor is a powerful image for students. By limiting its use students did not receive the full message of how technology could be integrated into their learning.

Teacher planning time appeared to be adequate. There was little complaint about lack of planning time from the Project Homeroom teachers. What proved to be a hardship was the amount of communication that the teachers received via Prodigy and electronic mail. During Christmas break one teacher had to disconnect the phone to get someplace and quiet. Evening office hours could be a difficulty for most any teacher. The only way it appears that it could work is if the students were mature enough to communicate about particular school problems. There was an indication that much of the early communication was frivolous and of a personal nature. Eventually this settled out but not until after a significant time for learning and trial.

While the level of interdisciplinary cooperation was exciting, the so called "license to take risks" presented additional work to teachers. With a no fail policy in place on top of learning about and implementing the curriculum multiple repeats of assignments and explanations of material occurred. This presentation only added to the commitment to master and use the technology already required of the teachers. Although this type of policy may represent a philosophical difference between progressives and traditionalists, there still is a time factor which many teachers beyond those in Project Homeroom may not be willing to invest. We even wonder if this approach can be sustained by the Project Homeroom teachers over a longer time period.

As educators ourselves we realize that presenting a written curriculum plan having only one summer to develop is difficult. We were disturbed, however, by the adamant denial on the part of the Stagg teachers that high levels of written planning is conducive to quality teaching. One teacher called that kind of system too restrictive and indicated she hoped she would never be bound by it. This kind of reasoning can prove detrimental to any project at hand for two reasons. It makes it difficult to comprehensively evaluate the project without some teacher generated documentation.

Also, replication of the project by another school would be near impossible without some written guidance.

The team at Stagg perceived Homeroom as a "total package". They communicated to students that they were part of a special group. Teachers worked on study skills as well as social skills. Critical thinking and communication skill development appeared to be a driving force across the curriculum. The overall level of communication between teachers and parents was enhanced because of modems and computers. These teachers offered the following advice to others attempting this project, "First it is important to get a firm commitment from the technology supplier that what is promised will be there, up and running at the start of school. In the pre-planning stage think about what educational outcomes you desire and then stay focused throughout the project. A project like this offers a unique opportunity to break new ground. Finally, all team members must realize and accept the level of commitment involved." These seems to be sage advice. If the group at Stagg can adhere to it over time, the program will no doubt prove to enhance education as a whole.

Summary

Each school expressed frustration and dissatisfaction regarding technical difficulties surrounding the home-school connection. Communication servers were not fully operational to the extent promised by the corporate sponsors. The other major complaint was the amount of stress and potential for burnout that the project generated. It is our opinion that all of these negatives could have been eliminated or reduced if the project had not been so ambitious from the outset. Perhaps a small pilot project with at least a full year of planning by teachers would have led to more initial success.

Even with the above setbacks the teachers, students, and parents appeared genuinely enthused and relatively satisfied with the accomplishments of the Project. Across the board Project Homeroom accomplished a number if things. First, it proved that corporate/school cooperation needs to proceed deliberately but slowly. Much more planning and testing was needed on both ends to reduce the number of mishaps that occurred during the program startup. Second, it showed how creative and resourceful collaborative teaching can be, even if only used sporadically. From planning and implementing initial themes and projects to "rolling with the punches" as the year progresses the teachers involved showed exciting resiliency. Finally the Project demonstrates that the ideas of new teaching methodology coupled with the available of new technology excites all participants in the educational process. It is our belief from these site visits that the true successes of the Project Homeroom will be determined in the second (and later) year(s).

Question 2/3: Working collaboratively on shared projects.

Maine East: Students

When students were asked to describe an opportunity of collaborative group work responses were mixed. "Personally, I don't like it and I don't think it's ever going to work," stated one student. Another said, "We are far behind. No one knows whose

doing what" and "None of the projects are really finished." Item responses, on the one hand, found field trips and projects (27.6%) and specific subjects (34.2%) to be liked by students. On the other hand, 13.2% indicated group work to be boring and 14.4% did not like the field trips or projects.

Maine East: Parents

When asked to describe an example of students' collaborative projects, one parent stated, "I don't like the group projects because I feel people's grades were affected with those who didn't do their work." Of the 29 who chose to respond to this question, six were unable to give an example, six talked about group efforts and five discussed peer interactions. Two individuals noted that some students do all of the work within the group, a drawback to any group process.

New Trier: Students

Once again responses were diverse: "I like working in groups. It totally depends on who your group is but is usually easier on everyone." Others stated, "I think some of the linkway programs were fun but just busy work" and "We work too much in groups. Some people can let everyone else do all the work and still get credit." Verbatim student responses referred to group work with computer hardware and software including Prodigy (21.8%), peer interactions (14.5%), integrated subject matter (9.1%), group learning (21.8%) and that group work was fun and interesting (27.3%). Activities described as being done within groups included field trips and projects (14.5%) and those related to specific subjects (18.2%). Many students felt that working with the same group was beneficial (10.9%) while others did not like the group collaborative concept and found it boring (9.1%) or too much work (9.1%). Two students felt they had received lower grades because of their participation in Project Homeroom.

New Trier: Parents

Fourteen parents chose to answer this question. Three discussed group interaction or improved motivation. Four felt that collaborative efforts were interesting for students. Eight found group work beneficial. "It was a good, positive experience," said one parent. Two, though, said that the same students do all of the work, and one parent felt that group collaboration decreased communication.

Amos Alonzo Stagg: Students

Many Stagg student respondents spoke of learning in computer groups or classes (27.9%). Many also spoke of liking a particular subject (31%) while others complained that some students ended up doing all of the work (29.5%). As one student described it, "If one person doesn't do their job, the whole group fails."

Amos Alonzo Stagg: Parents

When asked to describe a collaborative student project, one parent aptly described the concept by saying, "I think it widens their education and teaches them

how to act in a team." Response data found that 27.5% thought that group collaboration affected peer interactions. Students working in groups seemed to offer group benefits felt 17.5%, yet another 17.5% felt that the same students were doing all of the work.

Question 2/4: Learning across several different subject areas

Maine East: Students

Project Homeroom also combined learning across subject areas. Students were asked to describe an example. Nearly twenty-seven percent stated that they liked studying specific subjects. Only 9% did not. One student stated that "We do all the same things that regular students do."

Maine East: Parents

In describing student learning across different subject areas, five of the 28 who chose to respond were unable to give an example, eight discussed the benefits of group work, six thought the idea sounded interesting and seven were able to discuss the integration of subjects.

New Trier: Students

Twenty five percent of the students described interdisciplinary learning across several different subject areas, the effects of the interaction and the positive value (8.3%) of interdisciplinary learning. Field trips, projects, and specific subjects were especially liked by 31.3% of the students, but not by another 18.8%. One student said his/her grades had lowered because of the Project and another felt that not enough time was spent using the computer.

New Trier: Parents

Similarly, parents were asked to describe the concept of learning across several different subject areas as it applied to their child. Of the ten parents who chose to respond, six discussed the integration of subjects and six found the interdisciplinary approach to be interesting. One parent thought the approach had helped to motivate students and another liked it when school work was done on the computer.

Amos Alonzo Stagg: Students

Students were also asked to describe an example of combined learning across several different subject areas. Many of the students discussed the integration of class subjects (34.4%) and either liking (36.1%) or disliking (18%) a specific subject. "Computers provide more learning experiences for everyone" and "I did learn a lot and remember a lot." One student relates the interdisciplinary learning process as follows, "One time when we did family reports, we had to do a collage in German, write a report for English and be graded for historical contact (content)."

In describing the combined learning across subjects offered through Project Homeroom, parents talked about the integrating of class subjects (27.5%) and the fun and interesting aspect of the combined effort (37.5%).

Summary

Although student enjoyed working on the collaborative projects there were several complaints. Some of the students felt the project were disorganized, boring and that oftentimes only one or two students did most of the work. The parents reflects these statements; however, they also believed that group work was beneficial for their child.

The students were able to describe specific examples of interdisciplinary learning and, in general, had no negative comments about the process. Most described liking particular subjects, the field trips, or the projects. Although parents talked about the value and interesting aspects of group work and interdisciplinary learning none could cite an example. This is consistent with our previous on-site findings that, although all of the schools talked about an interdisciplinary environment and cooperative learning, actual implementation fell far short of the plans.

Why Did Student and Parents Decide to Participate in Project Homeroom?

Another question that arises when examining an effort like Project Homeroom is why someone, a student or a parent, would want to participate in such a project. Each of the schools studied maintains a fine reputation for quality education, able to cite histories of impressive achievements for and by their students. While the enticement of a free computer might encourage a student to want to participate in a developmental program like Project Homeroom there are certainly bound to be other reasons that interest both students and parents. Parents, especially, will have differing motivations underlying a desire to have their child take part in this effort.

To help address this issue two questions were added to the first written survey instrument sent to all program participants. Responses from students and parents were coded into the Flextext software and analyzed according to the conceptual map previously mentioned. Tables of responses by school by respondent group, included in the Appendix to this report, total the number of respondents indicating a particular conceptual orientation to each question. Understanding the responses to these questions is a necessary prerequisite, we feel, to understanding the subsequent attitudes about and concerns with Project Homeroom.

Question 1/2: Why did you decide to participate in Project Homeroom?

Maine East: Students

Of the 67 students who gave a response to this item, 28% said they chose to participate because of the free computer and another 26.9% because the participation sounded interesting and like fun. Others perceived the participation to be a great opportunity (16.4%) or a chance to learn about the computer (17.9%). "I decided to participate because I wanted to learn more about computers and how to use them," is an example of one student's response. In 16.4% of the cases, students felt forced by their parents to participate. A student wrote, "My parents mainly forced me but I like the idea of my own phone line." A few students saw participation in the Project as an opportunity to increase motivation or to improve grades. One student-respondent was simply curious about Project Homeroom.

Maine East: Parents

Parents were also asked to give reasons why they had chosen to participate in the Project. Many parents see computers as a "necessity of life today and in the future" and saw computer knowledge as the way "to move forward in today's world." As would be expected, the highest response rate to the question about participation was to learn about and use the computer (33.9%). Other reasons for participation were to improve the student's grades (16.1%), to look toward the future or to enjoy the prospect of having a free computer at home.

New Trier: Students

It sounded like fun and interesting said 33.8% of the students. Another 14.1% saw this as a great opportunity. Others decided to participate to learn about the computer (21.1%) or to gain free use of a computer (21.1%). One student stated that the "teachers were good and my parents wanted me to have them."

New Trier: Parents

When asked why they decided to participate in Project Homeroom, the 21 who answered the question said they wanted their student or themselves to learn about the computer (28.6%). They saw it as a great opportunity (28.6%) and a way to prepare for the future (19%). Others looked upon the Project as offering a fun experience, a way to improve grades, or an opportunity to work in a group. Parents saw the Project as a way "to help give students focus on their school work", "to expand student knowledge of capabilities of the computer; to make computers a working tool", "to help motivate" and for "improving computer literacy."

Amos Alonzo Stagg: Students

One student said, "I was picked and I thought it was a good opportunity to further my educational process." Still another reason was that "my parents wanted me to. It would be a good experience." The actual responses to the question showed that 26.5% wanted to participate to learn more about the computer, 16.2% saw it as a great opportunity, another 16.2% as good preparation for the future and 20.6% as something fun to do. In 19.1% of the cases, students said that their parents made them participate.

Amos Alonzo Stagg: Parents

When asked why they participated in Project Homeroom, 16.9% saw it as a way to learn about the computer, 14.8% as a way to improve grades and education and 20.4% to increase communications with the school. "I like the idea of being more involved with my child's education," stated one parent. Another discussed the enhancement of education and "computers as the key to the future."

Question 1/3: What do <u>you</u> expect to get out of Project Homeroom?

Maine East: Students

Students were asked in the third item to tell what were their expectations from participating in Project Homeroom. Of those who responded to the questionnaire, 30.4% made no response to the question and 71.4% said that they hoped to learn about the computer (readers should be reminded of multiple concept coding within responses). Nearly eleven percent hoped to improve their grades and educational experience. While four of the respondents had no particular reason for wanting to participate, a few other students saw the Project as a way to increase communication with the school or to become more prepared for the future.

Maine East: Parents

Expectations from the program included gaining "hands on experience" with computers and "to learn new computer applications like spreadsheet or data base," and "to become more computer literate." Learning about the computer was the favorite response of 64.8%. Other responses included to improve grades (9.2%) and communication with the school (14.8%). One individual noted that "I have not received any information on how to communicate with the teachers at the school."

New Trier: Students

Expectations from Project Homeroom strongly centered on learning to use the computer, 76.7%. Written student comments talked about "greater self esteem," to "bring my grades up," "getting motivated to get my work done," and the expectation to "learn more about computers and be able to type faster."

New Trier: Parents

"I would like to feel comfortable while using the computer," was one parent's expectation from the Project. Another sensitively wanted to add "another dimension to my relationship with my son." Of the fourteen parents who answered the question about Project expectations, 11 (78.6%) expected to learn about computers. Other mentions included to improve student performance in school and to help the student get better grades. One parent felt the program was not long enough. Another voiced concern about the slow start and apparent lack of organization.

Amos Alonzo Stagg: Students

Hopes "to learn more about group work and the computer," as well as to gain "a lot of experience with computers and hopefully jobs will come easier" were examples of student expectations from the Project. Survey responses reinforce these expectations with 74.1% of the students wanting to learn more about the computer, 16.7% seeing participation as a way to prepare for the future, and another 16.7% hoping that participation would improve their learning and school performance.

Amos Alonzo Stagg: Parents

Expectations from Project Homeroom were highly focused on learning about the computer (76.9%). Parents said "I don't expect a lot for myself but I do expect a lot for my child;" "I hope my daughter will teach myself and my children how to use the computer."

Summary

A large portion of the respondents, both students and parents, had the idea that Project Homeroom involved computers. Students for the most part decided to participate in Project Homeroom in order to have a computer or because they had the idea that it would be fun, interesting, or something different to do. Their expectations of the Project were to learn to use the computer they now have comfortably so as to

achieve higher grades. The parents, for the most part, had similar ideas and expectations of Project Homeroom for their children. Project Homeroom was getting a free computer and having their children learn how to use that computer for their schoolwork. They also felt that having the technology would prepare their child for the future, beyond just receiving better grades while in school.

Has The Project Changed Participants Use Of and Comfort With Technology?

One of the issues inherent in the Project Homeroom effort concerns itself with how participants view computing and telecommunications technology. If computers and telecommunications are to make a significant impact in people's lives one important condition must be satisfied. Individuals must be willing to use the technology for reasons beyond just to use the technology. They must find ways that it can support their normal activities, or encourage them to develop an interest in new activities. Word Processing as a computing application, for example, is only useful when people elect to word process a document rather than hand writing it or typing it on a conventional typewriter.

The evaluation of Project Homeroom sought to investigate this aspect of introducing technology usage into the school and home by asking students and parents direct questions on the technology. In both the first and second written surveys participants were presented a list of computer applications. This list was developed from those applications that were to be used in the Project and other applications commonly found among regular computer users in education. Not every potential application was given since many others have little relationship to the educational setting or are too specialized in scope and not likely to be seen in this usage group.

Each student and parent was asked to indicate, on a five point semantic differential scale, how often they used each application and how comfortable they were in using the application. A low score (around 1) would indicate that the respondent either used the application "Rarely" or were "Hardly" comfortable in its use. Likewise a high score (around 5) would indicate that the respondent felt that they used the application "Often" or very "Very" comfortable in using it. The first survey asked respondents to indicate their use and comfort perceptions are remembered prior to the start of Project Homeroom. It would have been better to make this query actually before the start of the project; unfortunately, the evaluation team was not contractually enabled until the end of August, 1991 making timeliness of this task impossible. The first survey also asked respondents to indicate their views as of the point in time they completed the survey (around December, 1991). The second survey, given in May-June of 1992, asked the same questions so as to update us to any changes in opinions.

Data from these three points sets of questions were analyzed using paired samples t tests. We looked for statistically significant increases or decreases in the average comfort and usage reports for both respondent groups. Tables summarizing this data are presented separately for both students and parents within each of the participating school districts in the Appendix. When reviewing the results in this section readers should remember that this data represents self reports on the part of the respondents. No effort was undertaken, nor are we sure how it could have been done, to ascertain the exact us of each particular microcomputer application. Nor do we know of any more reliable way to determine how comfortable someone is with a particular task other than to ask them in a manner that would encourage and open and honest response.

Maine East High School

At Maine East High School students reported using virtually all computer applications significantly more after the start of Project Homeroom than before it. Only students' use of Graphics applications did not increase significantly. Since this questions depended upon students remembering their comfort levels with the software prior to the start of Project Homeroom, it is conceivable that students were very excited about having the technology in their home and tended to over-estimate its use. Nine of the fifteen applications experienced a significant decrease in use. Only the use of Spreadsheets increased for students both from before the project until its start and over the course of the first year of the project. Word processing, Utilities and Integrated Packages all seemed to reach a plateau of use and then tended to maintain at those levels over the course of the first year of Project Homeroom.

The students' reported comfort in using the various software packages tended to parallel their reported use of those applications. All applications except Calendar/Scheduling, Accounting/Finance, and Graphics experienced statistically significant increases in comfort of use. Over the course of the year, these applications developed in comfort and then seemed to maintain those levels from the start until the end of the first year of the project. Two exceptions to this trend pertain to Spreadsheets and Computer Programming. Students reported becoming significantly more comfortable using spreadsheets during the time before the start of Project Homeroom and its actual beginning. They continued to report increasing comfort levels in using Spreadsheets as the as the year progressed. This trend was exactly reversed for Computer Programming. Whereas students reported an initial comfort with computer programming at the start of Project Homeroom, they reported a statistically significant decrease in comfort by the end of the first year. Once again, the Before Project Homeroom versus Start Year 1 comparison seems to be reflective of an expectation to become comfortable with specific applications. Maine East's implementation of Project Homeroom made regular use of spreadsheets, hence the apparent continued increase in comfort. Computer programming was not so highly stressed and saw a marked decrease in comfort level.

Parents of Maine East students seemed more reserved in their comfort and use changes in the program. Parents reported a significant increase in their usage of specific applications such as Word Processing, Communications, and Tutorials/C.A.I. from before the project's beginning to the time of its actual start. Maine's implementation of Project Homeroom concentrated upon Word Processing in all classes and upon the Communications software used to link home to school and homes to homes. After Project Homeroom began no significant increases in any of the applications was reported. In many cases parents reported less use of some applications toward the end of the first year than at its beginning, although these reductions in reported use were not statistically significant.

Maine parents reiterated their reports of application use when providing data on their comfort with each application. Parents' comfort with Word Processing and Communications applications increased significantly from before the beginning of the project to its actual start-up. Additionally, parents reported a significant increase in their comfort using Computer Games and Math/Statistics applications. In comparing the

beginning of the year to its conclusion, parents reported no significant changes in their comfort with the various packages. Thus it appears that parents perceived that they gained quite a bit in terms of comfort with and use of the different computer applications at the beginning of the year but very little over the course of the year.

The overall picture for Maine East seems to be one of initial excitement and expectation. Students and parents alike expressed significant increases in both their use and comfort with the various software applications. The excitement was expressed specifically in connection with the applications most used during the project at Maine East. This exuberance seemed to fade as the year wore on. Students expressed their disappointment with the project in terms of their own high expectations by reporting statistically significant decreases in use and comfort on the self-same applications that they had expressed such enthusiasm for at the beginning of he project. Parents seemed to expect less from tne project as evidenced by their limited number of reported significant increases in use and comfort prior to the start of Project Homeroom. At the end of year one comparison, parents reported neither significantly increasing nor decreasing in their comfort or use of the various applications.

New Trier High School

New Trier students seemed to be very excited about the anticipated benefits of Project Homeroom. They reported an increase in their use of all of the computer applications at the beginning of the project. All of these reported increases were statistically significant except for Computer Games and Accounting/Finance. It seems, though, that the initial novelty of and excitement for the program began to decline as Project Homeroom progressed. Students reported significant decreases in their use of nine of the fifteen applications. Student use reports for two of the application over the course of the project were of particular interest. There was no change whatsoever in students' use of the Database software. Also, there was a statistically significant decrease in the use of Computer Games. The table shows a slight increase in Computer Games use at the beginning of the project. Then over the course of the entire project Computer Games use dropped to below the level reported for before Project Homeroom began. We take this as a good sign, indicating that students redirected their interests away from using the computer as an entertainment activity and towards applications more related to an educational objective.

Students also reported significant increases in their comfort using the computer across all applications except with Computer Games and Accounting/Finance. This is consistent with their reported use of these same fifteen applications in New Trier's version of Project Homeroom. Over the duration of Project Homeroom at New Trier students only reported significant changes in their comfort using five of the fifteen applications. Students previously reported no significant increases or decreases in their use of Database software during the first year of Project Homeroom. In contrast to this they reported a statistically significant increase in their comfort with database application software. Students also reported a significant increase in their comfort using Utilities applications. They reported significant decreases in comfort for both Computer Programming and Graphics applications. This could possibly be due to an expectation to learn computer programming as a function of the project. As the project unfolded and

programming was not one of the skills stressed, students may have become disappointed and the decrease in comfort they report might be an indicator of that disappointment. Students also reported a significant decrease in their comfort using Spreadsheets. This is interesting since spreadsheets were used often in several of the Project Homeroom classes. With the emphasis of spreadsheet use in the project it would seem logical that comfort should increase from the beginning of the year until the project's conclusion. This does not seem to be the case at New Trier.

Parents tended to report significant increases in the use of those applications most stressed in the project. Word Processing, Communications, Integrated Packages, and Tutorials/C.A.I. use were all reported as increasing in usage from before the project started to the actual beginning of Project Homeroom. Additionally, parents reported a significant increase in their use of Computer Games applications. This increase in Computer Games use at the beginning of the project dropped for parents over the course of the year as it did for students. The only other statistically significant change in applications use pertained to Graphics applications. Much emphasis was placed upon the Linkway software at the beginning of the year. When problems with the local area network arose, much of the plans for using Linkway fell by the wayside. This seemed to be reflected in the reports given us by the parents for the use of graphics applications.

New Trier parents reported significant increases in their comfort in using nearly all of the computer applications on the questionnaire from before the project until its start. Only three applications were not rated as improving in comfort. C.A.D/C.A.M. and Accounting/Finance packages were not addressed by Project Homeroom at New Trier, so it is not surprising that they were not highly rated with regard to comfort. However, Spreadsheet applications were given quite a bit of attention during the program. It is surprising that parents did not report becoming more comfortable using this particular computer application. Over the span of the first year of Project Homeroom at New Trier parents reported significant decreases in their comfort using Computer Games, Word Processing, and Graphics applications. Parent comfort on the other applications were relatively unchanged throughout the year. It is not difficult to assume that there was a "peaking" period at the beginning of the program where the freshness of having the technology in the home overwhelmed parents with expectations of the technology. Expectations appear to have become more realistic as the year progressed.

Both students and parents at New Trier High School seemed to experience a period of great excitement at the very beginning of the project. During this period they expressed high expectations regarding having and using the computer. As the year progressed the excitement seemed to dwindle as reflected in the decline in reported use of and comfort with the various computer applications. Before the project actually began students and parents both reported high levels of use and comfort regarding the applications they were asked about. Overall students tended to respond favorably to more of the applications than did their parents. Parents tended to favor specific applications, usually those being highlighted by Project Homeroom (i.e. Word processing and Communications). During the course of the project students and parents tended to report decreased use and comfort with the particular applications that they reported high comfort and use on at the project's start.

Amos Alonzo Stagg High School

Stagg High School students were very positive toward all of the computer applications they were asked about on the two survey instruments. Students reported significant increases in their use of all applications even before the start of the project. As the year progressed students reported using Computer Games, Graphics, C.A.D./C.A.M., Tutorials, and Integrated packages at a significantly lower rate. These decreases are understandable for several reasons. As students become familiar with more and more applications they seem to report spending more time in those applications than in using their computer to play games. As students became more familiar with various applications they may have been exploring more deeply into the advantages of specific applications rather than depending upon the ease of use found in integrated packages. Lastly, as students get to know the major applications emphasized in Project Homeroom, they depended less and less upon the tutorials for those applications. The other two applications were not emphasized in Project Homeroom, so it is understandable that as the program unfolds use of these applications would decline.

Student ratings of their comfort with the various computer applications paralleled their ratings of the frequency of use. Before the start of Project Homeroom until its actual beginning students reported significantly increased levels of comfort with all of the fifteen applications found on our surveys. Reported comfort levels differed from reported use levels over the course of the first year of the project in that students reported significant changes in only four of the fifteen applications. Graphics, Tutorials, and Integrated Packages tended to decrease in student reported comfort as the project progressed. Reasons for this decline are most likely due to improved familiarity with those applications and a lack of using them toward the later stages of this first year. Students also reported that Database applications increased in comfort by a statistically significant amount. This is especially interesting since database applications were not particularly stressed in Stagg's implementation of Project Homeroom.

Stagg parents expressed significant increases in their use of Word processing, Communications, Spreadsheet and Graphics applications prior to the actual start of Project Homeroom. These applications were highly publicized as being an integral part of Project Homeroom at Stagg so their high ratings are quite understandable. Two other groups of applications were also reported as having significantly increased prior to the start of the project. Accounting/Finance and C.A.D./C.A.M. applications were not as much a part of Project Homerooms yet several parents indicated that they had increased their use of these applications. It is more than likely that these increases reflect a combination of desires of use and an actual use of the computer for purposes beyond those found in the project itself. Use of Tutorials, Utilities and Integrated packages were also reported as having increased significantly. These applications are most apt to be introduced first. It is therefore not unusual that parents would indeed become more familiar with these applications rapidly. Parents only reported significant decreases in their use of three applications: Computer Games, Spreadsheets, and Accounting/Finance over the course of the entire first year. The decrease in computer game playing may be explained by the idea of the novelty of having a computer wearing off over time. Spreadsheets are difficult to master without a particular application for the spreadsheet to be applied to. If no application could be found within the parent's home or work such

an application would have little to no long term relevance. Accounting/Finance applications, though highly regarded by parents at the project beginning, was never introduced as a part of Project Homeroom. More than likely this is again a situation where continued use of an application is unlikely unless that application fits a particular need or desire.

Parents reported significant increases in their comfort levels prior to Project Homeroom on the exact same applications as they had previously identified in their use of computer applications. The only exception to this was in the case of Accounting/Finance applications programs. No significant change in comfort with this application prior to the start of Project Homeroom was indicated. Over the course of the year parents comfort levels seemed stabile with respect to all of the applications queried. No significant changes in comfort were reported for any of the applications over the life of the project's first year. Evidently, parents were either satisfied with their comfort level or not using any of the various applications very much at all.

Stagg students and parents seemed very excited and enthusiastic about the coming of Project Homeroom, as evidenced by their reported increases in both comfort and use of the various computer applications. Parents seemed more pragmatic than students and reported significant changes in fewer applications. The applications parents did report significant changes in on the use and comfort scales tended to be those applications most stressed in the school. Stagg students were unlike their parents in reporting changes in their use and comfort with the technology. Students reported significant increases over all applications prior to the start of the project and significant decreases over time after the project had begun.

Across all of the schools

Students at all of the high school studied by the Illinois State University evaluation team expressed their great excitement and anticipation of the perceived benefits of Project Homeroom by reporting highly significant increases in their use of all fifteen computer applications. All applications were seen as being more highly utilized at the beginning of Project Homeroom that at any other time. Unfortunately, the students also indicated a discouragement with the program over the course of the first year. Students reported significant decreases in their use of all but two applications overall. Over the course of this first year, there were no applications that increased in use over the beginning of the project. Computer application usage either decreased or remained fairly constant.

Students reiterated their enthusiasm at the beginning of the project in terms of their comfort with the applications. Once again, all applications were perceived to have become significantly more comfortable with the onset of Project Homeroom. Over the course of the first year students indicated that their comfort level changed significantly with regard to only five applications of the fifteen listed. Database software was the only application to increase in comfort significantly. Communications, Computer Programming, Graphics and C.A.D./C.A.M. declined in reported comfort levels. Of these four applications only communications was originally touted as an integral part of the project. The rest seem to be indications of student discouragement over a failure to

meet expectations (real or anticipated). Communications probably declined in comfort since a large part of its use depended upon local area networks being functional at the schools. This did not occur until quite late in the first year of the project, with the result that Prodigy was used much more extensively and for purposes well beyond what any of the teachers had imagined.

Parents mirrored their students in terms of applications use. Substantial increases in use were noted prior to the actual beginning of Project Homeroom followed by decreases in use as the year progressed and the novelty wore off. The applications affected were mostly those advertised as integral to the project (Word Processing, Communications, and Integrated Packages). The majority of the other applications enjoying significant increases in use were those that parents may have wished were included in the project but were not or were ones that parents invested in outside of the Project Homeroom effort (such as Computer Programming, C.A.D./C.A.M., and Graphics). Parents also experienced significant declines in their use of Computer Games, Databases, and Spreadsheets.

Parents' reported comfort with the applications also followed this same trend of high excitement followed by decline. All of the applications except Accounting/Finance were reported as having increased in use significantly prior to the start of Project Homeroom. After the start of the project parents' reported comfort seemed to level out. Either parents were satisfied that they could operate all of the applications software sufficiently or were using the applications little (if at all) and were had internalized their own level of comfort. Judging from the data collected it is likely that the latter explanation is the more correct.

In general, all parents and students across the three schools seemed very pleased and anxious to get started with Project Homeroom. As evidenced by their reported increases in use and comfort regarding the various applications. Parents and students seemed to over estimate their own use and comfort since many of applications were not in place until after they had been surveyed. Their initial enthusiasm tended to trail away as the project progressed with reported declines in both use and comfort levels across several applications.

How Has The Project Changed Participants Use of "Out-of-School" Time?

Another way to measure the effectiveness of a innovative educational program is to examine its impact on behaviors outside of the learning environment. Project Homeroom, through its placement of technology into the homes of participants and its involvement of parents in the process of education, has the potential for reaching beyond the walls of the school to change how students spend all of their time. Learning is not just an activity that takes place in school. It is clear, though, that learning cannot take place unless there is interest and engagement on the part of the learner. When students, or their parents, are more interested in activities unconnected with the schooling (or any novel) process there is little chance for learning to take place. When students and parents engage in activities that are challenging and innovative there is a higher degree of probability that sustained learning can occur.

The evaluators of Project Homeroom in the Maine East, New Tier, and Amos Alonzo Stagg High Schools studied the question of out of school impact by the project through a particular set of questions administered on both the first and second written survey instruments. These surveys asked students and parents, in part, to indicate out how many hours during a typical week they spent on different activities. These activities were separated into those that might involve the use of a computer and those that typically would not. The list of activities was compiled by combining those project related tasks that were undertaken by the schools with lists of out-of-school leisure activities undertaken by both adolescents and adults.

Responses to these questions varied widely, with some individually reporting few total hours across the activities and others reporting more than could be accounted for in several weeks, let alone a single week. Since the intent was not to compare the total numbers of hours spent on any activity but rather changes that occurred across the span of the project each respondents hours were converted to a percentage of their total. In this way comparisons could be made on a group wide basis without concern that the variability in the number of hours reported would confound any results. The data was then analyzed using paired t tests comparing responses that represented student and parent reports from the beginning and end of the first year of Project Homeroom. A summary of this data for each school and overall across all schools is presented in the Appendix.

One interesting sidelight that came out of this series of analyses had to do with comparing changes in structured time utilization. The research literature is clear in its indications that students who spend more time on structured activities (such as organized clubs, sports, and the like) are also the same students who attain superior academic achievement. This may be due to high achieving students being attracted to structured activities. It may also be due to a relationship between structured activities and a necessary structure to achieve academically. We investigated this relationship in the Project Homeroom students using data provided from the first survey effort and found that there is a relationship in those students who spend more time in structured activities and engage in more of the computer activities undertaken by the project (as opposed to playing computer games or other unrelated tasks). This finding is suggestive of the possibility that Project Homeroom computer learning and use might serve as a model for

increased structured activity engagement and perhaps later increased academic achievement. It was such an important and interesting finding that it will be published in an upcoming edition of the *Journal of Research on Computing in Education*, a refereed scholarly journal dealing with the use of computers to enhance education at all levels. A copy of the in print article in included in the Appendix.

Maine East High School

Over the course of Project Homeroom's first year at Maine East, students reported spending their free time on a number of activities. These activities included those that required the use of the computer at home as well as those that did not. Students reported a significant increase in the their engaging in such unstructured activities as watching television, listening to the radio, listening to records, tapes, and CD's, talking with friends on the phone, visiting them in person, and just relaxing at home doing nothing. The only structured activity students reported engaging in was participating in a sport or group activity. None of the activities requiring the use of the computer at home changed significantly during this first year of the project.

Maine parents indicated that they were spending more time doing both their "School" work and their "Employment" types of work at home at the end of the first year of this project. They also reported an increase in their completing these types of work on the computer. Though none of the increases or decreases reported were of statistical significance, it is interesting to note that parents also reported an increase in "free-time" related activities. Activities such as visiting with friends on the phone and in person, listening to music on the radio or other means, doing a hobby or craft, or just relaxing doing nothing at all were seen as happening more often at the end of the year.

Overall students tended to engage more over the life of the project in typically unstructured activities. It appears that their parents seemed to adapt the computer to their specific needs. This tended to free them to engage in their own unstructured activities (such as visiting with friends, relaxing, or doing nothing at all). Though students did tend to increase their participation in sports or exercise (a structured activity), their parents seemed to engage in structured activities more frequently and with more variety. Examples of this variety of activities include doing "school" and "Employment" types of work at home with and without the computer, as well as participating in clubs, hobbies, sports, and exercise. Bear in mind though that these increases in parents' engagement in structured behaviors were not statistically significant.

New Trier High School

Students were asked to indicate the amount of time they spend engaging in a variety of activities when not in school. The only significant increase in percent of time spent came in the case of students talking to friends on the phone. This increase is most likely a direct result of Project Homeroom providing an additional telephone to the household, with the additional telephone most often placed in the student's bedroom. It is interesting to note that the activities students indicated spending the largest amounts of time engaged in were essentially opposite types of tasks. Students reported spending in excess of ten percent of their time either doing school work at home or visiting with

friends in person. If the time spent visiting friends was also spent doing homework the results would seem more consistent. Over the course of the full year, students reported significant decreases in spending time engaged in such activities as completing schoolwork on the computer, communicating with other students via computer, working on Prodigy, or using their computer for other purposes than those mentioned in the questionnaire. It seems that, like the use and comfort results, students may have had high expectations at the beginning of the project for using the computer. As the year progressed these expectation did not seem to have been fully met and students seemed to have lost some interest.

New Trier parents reported significant increases in the time they spent on hobbies and in just relaxing and doing nothing at all. They reported a significant decrease in the amount of time they spent reading for pleasure. This data, coupled with knowledge gained from interviews and home visits, is inconclusive as to why these changes occurred. However, it is perhaps important to note that parents reported spending more than ten percent of their time engaged in doing work for their employment at home, watching television, and listening to the radio. None of the changes in the activities utilizing the computer were of statistical significance. Parents increased the amount of their "employment" related work at home over the course of the year, but also reported that they decreased the amount of "employment" related work they for which they utilized the computer. It would seem logical that having a computer at home would ease the burden of "employment" related work at home. Though these changes in time spent were not of statistical significance they may be of practical significance. Instead of helping it would seem that the presence of the computer was slightly deleterious.

Overall neither parents nor students experienced many significant changes in the amount of time they spent engaged in various non-school activities. Students generally spent the majority of their time either doing "school" work at home or visiting with friends in person. Students generally engaged in activities involving their computers less and less as the project wore on. Parents had very little significant changes in the amount of time they spent on the various activities. They reported spending less time reading for pleasure, but more time doing hobbies and just relaxing or doing nothing at all.

Amos Alonzo Stagg High School

When asked to relate the amount of time they spent engaged in various activities Stagg students indicated a significant increase in listening to music (radio, records, tapes, and CD's). They further indicated significant decreases in reading for pleasure, using the computer to communicate with other students, accessing the school's local area network, and working on the Prodigy service. Listening to music would seem to directly trade off with reading for pleasure, but the decreases in time spent engaged in computer related activities may have other explanations. Decreases in the amount of time spent accessing Prodigy and communicating with other students via computer may be attributable to dwindling interest and a loss of novelty in the technology over time. The decrease reported for time spent accessing the school local area network is probably best understood by the fact that the network did not become functional until later in the year. Students interested in using the school's local area network may have become

accustomed to using Prodigy as the substitute that, coupled with its late introduction, the network made little impression on the students.

Stagg parents reported significant increases in the time they spent engaged in several non-computer related activities during the first year of Project Homeroom. They indicated that they spent a majority of their time completing their own "school" work at home, visiting with friends in person, doing a hobby , art or craft, participating in club or group activities as well as sports and exercise. Many indicated increasingly attending sporting events and watching movies, concerts, and plays. Furthermore, parents indicated that they increased the amount of time they spent per week utilizing the computer to communicate with school administrators and teachers, as well as using the local area network. These reported increases lend support to the notion that Project Homeroom has helped Stagg parents become more involved with their childrens' educations through communication with the school via computer. They also indicate an increase among parents toward engaging in more structured, goal oriented activities.

Students at Stagg High School were unlike their parents in that they experienced increases in time spent on predominantly unstructured activities (such as listening to music). Their parents tended toward increasing the amount of time they spent on more structured, goal-oriented activities such as reading for pleasure, participating in clubs and doing hobbies. Additionally parents reported an increase in the amount of time they spent weekly communication with the school staff via the computer over the first year of the project.

Across all of the schools

Students at all of the high schools reported spending their out of school time engaged in various activities that both did and did not involve the use of the computer. Among these students reported significant increases in such unstructured activities as listening to music (i.e. radio, records, tapes, and CD's) and visiting with friends in person or on the telephone. Visiting with friends on the telephone is quite possibly a direct result of the students having their own phones as provided by the project. Students also reported engaging in sports or exercise. Students experienced significant decreases in the amount of time they spent involved with the computer. Specifically, students spent less time as the year went on doing school work on computer, communicating with other students, using the school network, and accessing the Prodigy service. With regard to Prodigy and other students, its is likely that students simply lost interest as the computer lost its novelty. After all, voice communication between students is faster and more familiar than is using a modem. In the case of the local area networks, these did not come online until late in the year and proportionally made less of an impact.

All parents reported significant increases in the amount of time they spent engaged in various activities involving the computer as well as those that did not involve the computer. The times parents spent engaged in all of the activities not involving the computer were reported as having increased significantly except for "Employment" work at home, watching television, listening to records, tapes, and CD's, and reading for pleasure. These activities demonstrated no significant changes in percentage of time spent over the course of the year. Of the activities that did involve the computer parents

indicated that only the time they spent communicating with administrators and teachers and accessing the local area network substantially increased. The time they spent on the rest of the activities remained fairly constant.

Overall parents and students both indicated that changes occurred in the relative amounts of time they spent engaged in various computer and non-computer related activities. Students participating in Project Homeroom predominantly drifted toward spending more time in unstructured activities such as talking with friends on the telephone. This effect is probably attributable to the students obtaining their own personal telephones courtesy of the project. Parents, on the other hand, seemed to spend increasing amounts of time engaged in more structured activities such as participating in clubs and doing hobbies.

What Problems Have Been Encountered With The Technology?

Nothing is ever perfect, and when it comes to highly technical and sophisticated equipment and services there is always a chance that something will not work quite the way it was intended. Such is the case in Project Homeroom, as equipment and services sometimes failed to be delivered on expected dates, broke down in unexpected and interesting ways, and were repaired or serviced. Such interruptions are not to be unexpected, yet the number of difficulties, their nature, and resolution will all impact the success of a project reliant on technology.

To ascertain a picture of this general issue we asked students and parents to respond to questions on both of the written surveys. Four questions (three on the first survey and one on the second) asked respondents what kinds of problems or difficulties had been experienced with their computer and telecommunications equipment, if the problem(s) had been resolved, and who provided the most assistance in resolving the problem. The single question on the second survey revisited this theme by asking what problems had been encountered. The number of respondents have been broken down by question according to the textual response categorical map previously developed. These totals are presented in the Appendix.

Question 1/4: Any problems with your computer or printer?
Question 1/5: Any problems with you telephone or modem?

Maine East: Students

51 students marked "no" and 22 of the 73 respondents marked "yes." When asked to describe problems, 53 individuals gave "no response," an expected close match to the number who had no problems. Of the 22 with a computer or printer problem, eight were related to the printer, four to the computer and three to technology or computer and printer in general. Other problem areas were with the modem, mouse, keyboard or with Prodigy. While 40% of those reporting a problem also reported that the problem was still current, another 15% said that problems were resolved and 40% did not state the status of the problem.

In regard to the telephone or modem most respondents, 59 of 73, said they had no problems and 58 gave "no response" when asked to describe problems. Of the 14 students reporting problems, ten were with the telephone equipment or service, two with the modem and four with Prodigy. While six telephone or other problems were still current at the time of the survey, five problems had been fixed either by the corporation or school. The status of four problems was unknown.

Maine East: Parents

Of the 72 parent respondents, only 18 had computer/printer problems. A number of individuals gave an explanation while most respondents gave "no response." While 13.6% of the reported computer/printer problems were still current at the time of the survey, 45.4% had been fixed. Two of the respondents suggested that problems were because of a lack of organization to get problems resolved.

17 parents reported telephone/modem problems. 53.3% were still a problem and 20% had been resolved. Two of the respondents suggested that problems were because of a lack of organization to get problems resolved.

New Trier: Students

In reference to problems with the computer or printer, 25 of 73 students said they did have a problem, with 19 reported problems with the printer, and four with Prodigy. At the time of the survey, nine problems were current and eight had already been fixed. Problems with the telephone or modem were reported by ten of the 73 students, six with the modem, three with the telephone and three with Prodigy. While three said the problem was still current, at the time of the survey, four reported that the problem had been fixed.

Problems with the telephone or modem were reported by ten of the 73 students, six with the modem, three with the telephone and three with Prodigy. While three said the problem was still current, at the time of the survey, four reported that the problem had been fixed.

New Trier: Parents

While 15 parents indicated some problem with the computer or printer, only five wrote about the problem. Of the five, three indicated problems with the printer, and one each with the computer or mouse. One problem was reported as being fixed, probably by someone at school, one problem was still current at the time of the survey and the status of one problem was not revealed in the response. One individual voiced concern about the lack of organization of the Project and its slow start.

Considering telephone/modem problems, four individuals reported the existence of a problem, two of which related to Prodigy. One problem was resolved, one was unresolved at the time of the survey, and the status of one problem was not indicated within the verbatim response.

Amos Alonzo Stagg: Students

Questions requesting information about problems with the computer/printer or with the telephone/modem, had a high "no response" rate as only 23 of the 76 students reported computer/printer problems and only 20 reported telephone/modem problems. Several individuals also talked about problems with Prodigy. While seven individuals with computer/printer problems at the time of the survey, said that problems were unresolved, six reported that the problem had been fixed. For telephone/modem problems, five were current and eight had already been taken care of.

Only 20 students reported telephone/modem problems. Several individuals also talked about problems with Prodigy. Five were current and eight had already been taken care of.

Amos Alonzo Stagg: Parents

When asked about problems either with the computer/printer or the telephone/modem, only 10 of the 59 (16.9%) said "yes" to computer/printer problems. While four computer/printer problems were still current at the time of the survey, three had already been fixed.

When asked about problems either with the computer/printer or the telephone/modem, only 10 of the 59 (16.9%) said "yes" to computer/printer problems and 11 (18.6%) to telephone/modem problems. While four computer/printer problems were still current at the time of the survey, three had already been fixed. Only two telephone/modem problems remained current while four had been fixed.

Question 1/6: Who helps when you have a technical problem or question?

Maine East: Students

When asked who had helped most with technological problems and answering questions, 19% gave no response. Of those who gave a response, 54.2% said that teachers had helped them most and 22% felt that other students had been helpful. Family members and other parents were also found to be helpful. About thirteen percent of the students could find no one when they needed assistance. When again asked about the status of problem resolution within the question item, 65 of the respondents (89%) stated that problems had been resolved.

Maine East: Parents

In order to get problems resolved, 35.9% of the parents turned to teachers for assistance and 25.6% resolved problems themselves. Ten percent felt that no one would help when problems arose. In verification of problem resolution, parents were again asked if problems had been resolved, to which 67 of the 72 (93.1%) said they had.

New Trier: Students

Students were asked again if problems had been resolved. Of the 73 student-respondents, 71 said that problems had been resolved and that 88.2% of the technical problems or questions had been answered by teachers.

New Trier: Parents

Of the 65 parent-respondents, 64 said "yes." When asked who had given the most help when technical problems or when question arose, 33.3% said teachers had been most helpful, 20% said they resolved their own problems, and one individual each reported receiving assistance from either a corporation, another student or another parent. One parent reported receiving no help with problems.

Amos Alonzo Stagg: Students

In general, had problems been resolved? Seventy two, or 94.7%, said yes. As far as who had been most helpful with technical problems or questions, 47.9% stated that teachers had been most helpful, whereas 42.5% felt that other students had been most helpful and 15.1% took care of their own problems.

Amos Alonzo Stagg: Parents

Fifty five of the 59 respondents, 93.2%, said that problems had been taken care of. As far as who had been most helpful for offering technical assistance or answering questions, 61.5% named teachers as most helpful and 20.5% said they had solved their own problems.

Question 2/2: Any technical problems with your equipment?

Maine East: Students

The first item on the second survey requested information about technical problems with equipment. Of the 84 student-respondents, 43 marked "yes" to having technical problems and described problems with the printer (40.5%) or computer (21.4%), or referred to the keyboard, mouse or to Prodigy and other software in general. While 19% of the reported problems remained current as of the time of the survey implementation, 21.4% had been resolved.

Maine East: Parents

When asked if there had been technical difficulties with the equipment, 18 of the 47 responding parents said there had been a problem. While the printer was the cause of problems in 42.9% of the reported cases, other respondents referred to the computer, keyboard, telephone or telecommunications. Five of the problems were reported as being current at the time of the survey. Six of the reported problems had been resolved

New Trier: Students

Students were first asked if there had been any technical problems with their equipment. Sixteen of the 65 responding students indicated an equipment problem, mainly with printers, but also with the modem, mouse, computer, software in general or Prodigy. Only one of the students indicated that the problem was still current at the time of the survey, and eight reported that problems had been fixed. Those who fixed problems were generally related to the school or to the home.

New Trier: Parents

Only four of the twenty parents indicated a problem with their equipment, either with the computer, printer or telephone. The school had fixed one of the problems.

Amos Alonzo Stagg: Students

Students were first asked if there had been any technical problems with equipment, to which 39 of the 74 (43%) said that there had been. Problems were listed as being with the computer (9%), with the printer (22.7%), with the telephone (15.9%) or with other technical aspects. In five of the 39 cases, the problem was still current at the time of the questionnaire, but 15, or 34%, had been resolved.

Amos Alonzo Stagg: Parents

In response to the question about technical problems, only 19 of the 55 parents reported having problems, seven of which mentioned printer or other equipment problems, and five of which were related to Prodigy.

Summary

When asked about technical problems or difficulties with computer equipment or telecommunications services both student and parent responses were very similar. A large portion of the problems reported were with the printers. Help with problems relating to the technology seemed to come primarily from the teachers. A few of the responding parents expressed concern over the lack of any organization or specific guidelines about how to handle technical difficulties. Almost all of the problems reported on the surveys were problems that had been satisfactorily resolved.

How Has Project Homeroom Impacted Student's Grades?

The Project Homeroom evaluation effort examined student's class grades to quantify changes in student academic achievement/performance that may be linked to each school's implementation of the project. None of the schools elected to administer standardized tests to their Project Homeroom students for the purpose of assessing a particular aspect of the Project's performance. In the absence of such measures students' grades were the only indicators available for consideration of academic achievement.

It should be realized that student grades are not considered by many educators to be the best of indicators of student achievement, performance, or aptitude. Grades have the potential for between-student inconsistencies even in the best teacher administered setting. Grades also tend to be more subjective measures than other kinds of assessments. Further, grades often do not have the statistical distributional qualities that make them suitable for advanced relational statistical comparisons. None the less, as the only measures available to the evaluation team, we examined the Project Homeroom students' grades very carefully for any indications of change that could be attributed to the Project Homeroom effort.

We would like to emphasize three important points concerning this analysis. First, we consider that any analysis or interpretation of grades should be reviewed while keeping both the strengths and weaknesses of the measure, as mentioned above, in mind. Second, grades are only one indicator of a student's academic performance. The scope of the material covered in the course, the difficulty of the material, individual students' interests, and the skill of the teacher in creating a conducive learning environment all come into play. Finally, we would encourage each school to consider more objective assessments that can be used in the second year to add another dimension to academic achievement beyond grades. Multiple measures could allow for a more meaningful interpretation.

Each of the three schools involved in Project Homeroom utilized slightly different methods in assigning grades to students. In order to consistently report on the overall effect of the project on student grades we converted all grades to a twelve point scale. A grade of "A+" was assigned a value of 12, "A" = 11, "A-" = 10, and so on down to "D-" = 1 and "F" equalling 0. Comparisons across grading periods were performed in three steps. In the first step, students' grades in each Homeroom class were compared to each of the remaining Homeroom classes and an aggregate of their non-Homeroom classes. One-way Analysis of Variance (ANOVA) was used for these comparisons. Statistically significant results were quantified using the Student-Newman-Keuls procedure as a follow-up test. This procedure gives a picture of the relative relationship of student overall performance comparing each of their Homeroom courses and the aggregate of their non-Homeroom subjects. Secondly, the Project Homeroom class grades were combined into an aggregate score and this score was then compared to the non-Homeroom aggregate using an t-test. This allows a more global comparison between Homeroom versus non-Homeroom subjects. All of these tests were performed at the .05 level of significance. Finally, each of the Project Homeroom subjects were compared with a sample of similar subjects of a similar difficulty level chosen from the same grade

level. A summary of the distribution of grades for the different Project Homeroom subjects is given for each school in the Appendix.

Maine East High School

Project Homeroom courses as a whole

Project Homeroom at Maine East consisted of four academic subjects: Mathematics (including Pre-Algebra, Algebra, and Freshman Algebra II), Biology, English, and World Cultures. Grades for these classes were reported twice per semester, once at midterm then again after the final examinations. At the midterm in the Fall of 1991, students grades in their non-Homeroom classes were significantly higher than in their Homeroom classes $F_{6,551} = 29.23$, $p < .0001$. The only exception to this was the case of Freshman Algebra II ($M = 6.71$), in which student grades were not statistically significantly different from non-Homeroom courses. The Algebra ($M = 6.01$) and World Cultures ($M = 6.57$) courses also had significantly higher grades than either English, Biology, or Pre-Algebra. From lowest average grade to highest average grade the courses ordered: Pre-Algebra, Biology, English, Algebra, World Cultures, Freshman Algebra II, and the non-Homeroom aggregate. When Homeroom courses ($M = 5.21$) were aggregated and compared to non-Homeroom courses ($M = 7.65$) for this first grading period non-Homeroom courses had significantly higher grades, ($t_{556} = 9.35$, $p < .001$).

This pattern was repeated in the end of semester grades for Fall of 1991. In this case the non-Homeroom classes only differed significantly from Biology, English and Algebra ($F_{6,545} = 14.84$, $p < .0001$). In order from lowest to highest average grades the ranked: Biology, Pre-Algebra, English, Algebra, World Cultures, Freshman Algebra II, and the non-Project Homeroom aggregate. When the Homeroom classes ($M = 5.54$) were aggregated and compared to non-Homeroom classes ($M = 7.34$), non-Homeroom classes again had higher grades, ($t_{553} = 7.35$, $p < .001$).

During the first half of the Spring 1992 semester World Cultures had significantly higher grades than the other Homeroom classes. This course also had higher grades than the aggregate of non-Homeroom classes, ($F_{5,549} = 32.24$, $p < .0001$). Biology remained the lowest average performance course followed by Freshman Algebra II, Algebra, English, the non-Project Homeroom aggregate, with World Cultures being highest. In the overall, the Homeroom aggregate score ($M = 5.45$) still did not overcome the non-Homeroom score ($M = 7.57$). The difference between Homeroom and non-Homeroom classes was again statistically significant, ($t = 7.35$, $p < .001$), with the students averaging significantly better in their non-Homeroom courses than in their Project Homeroom subjects.

In the last half of the Spring 1992 semester grades in the non-Project Homeroom classes (aggregated) exceeded those of Biology, Algebra, and English ($F_{5,547} = 16.59$, $p < .0001$). From lowest average grades to highest average grades the courses ranked: Biology, Algebra, English, Freshman Algebra II, World Cultures, and the non-Homeroom classes. Overall non-Homeroom classes had significantly higher grades ($M = 7.30$) than the Homeroom classes ($M = 5.68$, $t_{551} = 5.68$, $p < .001$).

Over the span of the entire year, the non-Project Homeroom aggregated grade scores were significantly higher than were the individual Project Homeroom class grades, $F_{6,2211} = 71.27$, $p < .0001$. Pre-algebra ranked the lowest, followed by Biology, Algebra, English, Freshman Algebra II, History, and the non-Homeroom aggregate. In comparing aggregates over the entire year, the non-Homeroom courses ($M = 7.30$) were consistently higher than the Homeroom classes ($M = 5.47$, $t_{2216} = 14.52$, $p < .001$).

English

Students in the Project Homeroom English classes tended to maintain at the C and D range in the first semester, improving as a whole to the B and C range in the second semester. They had slightly fewer A's and F's than their non-Homeroom peers. The most visible differences are between the Homeroom classes and non-homeroom classes (aggregated). Students received higher grades in their non-Homeroom classes than in the Homeroom classes. The difference in rates of grade attainment between Homeroom and non-Homeroom grades was close to 20% in almost all cases.

World Cultures

Project Homeroom students consistently outperformed their non-Homeroom peers. Homeroom grades were predominantly in the B to C range while non-Homeroom students' grades hovered in the C to D range with noticeably more D's and F's also. Students consistently earned less A grades in their Homeroom class than in their non-Homeroom classes. At the beginning of each semester there seemed to be more A's earned in all categories than at the ends of the semesters.

Pre-Algebra

There is very little to say about the Pre-Algebra class in Project Homeroom. It was only in place for the first semester. In the first part of that semester all of the students received a grade of F. In the second part of the semester, approximately 11% received B's, 77% received C's and 11% failed.

Algebra

Differences in grades across the semester for Algebra students are noticeable in the counts for A's and F's. All grades remained fairly constant across the year. Some exceptions include a radical drop in the number of A's earned in the first quarter of the second semester, and a slow increase in the number of F's earned as the year progressed. Homeroom students were comparable to their non-Homeroom peers across most grades except F's where they earned consistently less than the non-Homeroom students. Finally, Homeroom students did consistently worse in Homeroom Algebra than in the rest of their non-Homeroom classes.

Freshman Algebra II

Homeroom students in Algebra II maintained predominantly B averages throughout the first semester, giving way to C's in the second semester. Similar non-

Homeroom algebra students were consistently a half to a whole letter grade higher than homeroom students throughout the year. Homeroom students earned consistently more A's in their non-Homeroom classes. Overall, the worst grading period for Homeroom students was the first quarter of the second semester where more than 50% of the students received either D's or F's. They improved in the second quarter, with no one receiving less than a C.

Biology

Homeroom students remained fairly consistent over the course of the year earning C's and D's throughout. They were remarkably similar to their non-Homeroom peers across both semesters. The only difference of any note was that Homeroom students tended to earn more D's while non-Homeroom students earned more F's. As the year progressed, the non-Homeroom students began to earn more A's and B's while the Homeroom students were still predominantly earning C's and D's. There is no ambiguity in the comparison of Project Homeroom Biology to the non-Homeroom classes the Project Homeroom student took during the year. Homeroom students did much better in their non-Project Homeroom courses than in Project Homeroom Biology.

Summary

Homeroom students generally earned one half to one whole letter grade less in their Project Homeroom classes when compared to their non-Project Homeroom classes. Their peers in comparable non-Homeroom classes also earned slightly higher grades than Homeroom students across the subjects studied. Homeroom English and World Cultures grades tended to be higher than comparable non-Homeroom courses while Homeroom Mathematics and Biology tended to be lower. The non-Homeroom students also tended to earn more extreme scores (A's and F's) than Homeroom students.

It is important to note that the these comparisons between the participating students' Homeroom versus non-Homeroom courses are of course grades only, not taking the difficulty or any of the subjects into account. Maine East's implementation of Project Homeroom selected core courses for the project. This left only electives like Band, Chorus, Physical Education, and the like to compare against non-Homeroom grades. Further there is no indication of sufficient similarity in the level of difficulty or grading scheme used among comparable Homeroom and non-Homeroom subjects. Although comparable on the basis of broad subject coverage there are many potential explanations for the kinds of differences observed that go well beyond the Project Homeroom effort.

New Trier High School

Project Homeroom courses as a whole

New Trier High School selected four subjects for its implementation of Project Homeroom: Biology, English, Geography, and Geometry. Grades for these courses were reported twice per semester in the form of a midterm and a final grade During the Fall of 1991 the aggregate of non-Project Homeroom classes taken by Project Homeroom

students were found to have significantly higher grades than the individual Homeroom class grades in Geometry and English, ($F_{4,483} = 5.08$, $p < .001$). No other significant differences exist among grades was found for this grading period. The classes were ranged, in order from lowest to highest grades, as: Geometry, English, Biology, Geography, and the non-Homeroom aggregate. Non-Homeroom class grades ($M = 7.80$) were significantly higher than Homeroom classes ($M = 7.07$) in general, ($t_{486} = 3.62$, $p < .001$).

A one-way ANOVA for grades from the end of the first semester (Fall, 1991) showed significant differences in grades among several courses, ($F_{4,491} = 5.16$, $p < .001$). Geography grades ($M = 8.04$) were, on the average, significantly higher than those in either English ($M = 6.71$) or Geometry ($M = 6.39$). The non-Homeroom course grades ($M = 7.62$) were also significantly higher than Geometry grades. No other pairwise comparisons of average course grades produced statistically significant differences. This semester the courses ranked as: Geometry, English, Biology, non-Homeroom aggregated grades, and Geography. Non-Homeroom courses ($M = 7.62$) had higher grades than did the Homeroom courses ($M = 7.07$), but this difference was not as large as in previous comparisons ($t = 2.25$, $p < .025$).

Significant differences among average student grades were found on the Spring 1992 midterm grades, ($F_{4,472} = 8.98$, $p < .0001$). Non-Project Homeroom grades ($M = 7.84$) were significantly higher than all other grades except Geography ($M = 7.35$). Geography grades were also significantly higher, on the average, than those in Geometry ($M = 5.81$). The courses ranked from lowest to highest were Geometry, then English, then Biology, Geography, and finally the non-Homeroom aggregate. Comparing all Homeroom grades for this period ($M = 6.61$) to all of the non-Homeroom grades ($M = 7.84$) demonstrated that non-Homeroom grades were again significantly higher ($t_{475} = 4.87$, $p < .001$).

Significant differences among courses were found at the end of the Spring 1992 semester ($F_{4,483} = 5.12$, $p < .001$). The trend established in the first semester was repeated in the second semester, as Geography ($M = 7.75$) had the highest average grade. Geography grades were significantly greater than Geometry grades ($M = 6.22$). Non-Homeroom courses ($M = 7.71$) had significantly higher grade averages than both Geometry and English ($M = 6.73$). No other pairwise comparisons were statistically significant. The lowest mean grades were found in Geometry, followed by English, Biology, non-Homeroom courses, and Geography. Homeroom classes ($M = 7.01$) on the average had significantly lower grades than their non-Homeroom ($M = 7.71$) counterparts ($t_{486} = 2.81$, $p < .005$).

Examining grades over the course of the entire year, the non-Homeroom courses ($M = 7.74$) and Geography course ($M = 7.65$) were significantly greater than all other Homeroom courses ($F_{4,1944} = 23.05$, $p < .001$). Biology grade averages ($M = 7.05$) were greater than English grades ($M = 6.67$). The highest grades were found in the non-Project Homeroom courses, followed by Geography, Biology, English, with Geometry lowest. Consistent with previous results from the individual grading periods throughout the year, the non-Homeroom ($M = 7.74$) courses were significantly greater than the agglomeration of all Homeroom ($M = 6.91$) courses ($t_{1944} = 6.79$, $p < .001$).

English

Grades for Project Homeroom English students remained fairly constant across the grading periods. Student grades in the Project Homeroom English class tended to be approximately one letter grade lower than the grades in the aggregate of other non-Homeroom classes. While grades in Homeroom English hovered around the B and C level students' grades in non-Homeroom classes tended to be A's and B's. Homeroom students received slightly more grades of B and C than did non-Homeroom English students. The non-Homeroom students received more A's, D's, and F's. All students' grades remained fairly stable throughout the year, though the Project Homeroom students seemed to be more consistent. With the exception of a slight increase in A grades at the semester end, Homeroom students maintained B's and C's throughout.

Biology

Student grades in Biology were similar to those for English. Students tended to earn grades approximately one half to one whole letter grade lower in Homeroom Biology than in their other, non-Homeroom classes. This difference among classes was especially apparent at the end of semester grading periods. Overall, grades tended to improve during these periods. Non-Homeroom grades seemed to improve more than did Homeroom grades, with Homeroom Biology students tending to have more A's than non-Homeroom Biology students. At the end of the first semester this difference occurred at the expense of Homeroom students receiving more D's than their non-Homeroom peers. At the end of the second semester Homeroom students clearly received higher grades than the non-Homeroom students. Homeroom students earned more A's and B's, and less D's and F's, than non-Homeroom students in Biology. Homeroom students' grades tended to stabilize after the first quarter. Only small fluctuations of 3 or 4 percent are noticeable after that time.

Geometry

In the first semester, Homeroom students earned similar numbers of A grades in both Homeroom Geometry and in their non-Homeroom classes. They began the semester earning more D and F grades in Geometry and this trend only increased in the second semester. Non-Homeroom Geometry students consistently had less A grades than Homeroom students. Grades clustered consistently in the B range and high C range while Homeroom students tended toward the extreme scores, (A, D, and F). As with the other courses Homeroom student grades tended to peak at the ends of the semesters and then drop slightly in the first quarter of each semester.

Geography

The grades for the Project Homeroom Geography class were quite similar to the other Project Homeroom classes. Student grades tended to hover around the B to C range. Grades improved dramatically with increases in the number of A's received up to 27% from the first to second half of each semester. Unfortunately, those increases in A's decreased just as rapidly at the beginning of the next semester. Students' geography

grades fluctuated around one half of a letter grade below the non-Homeroom grades. Homeroom students did seem to be more consistent than their non-Homeroom peers. While Homeroom students had grades predominantly in the mid range, non-Homeroom students had grades in the extreme regions more frequently. Project Homeroom students' grades were more like their non-Homeroom peers when they were compared to those peers on their non-Homeroom classes.

Summary

The grades at New Trier High School for Project Homeroom students held fairly constant within the B to C range across all of the Project Homeroom classes. Homeroom students tended to lag about a half of a letter grade behind their non-Homeroom classes. Grades for the non-Homeroom classes were more like the grades of non-Homeroom students in similar courses than they were like the grades in Homeroom classes.

As from the discussion of Maine East High School it is important to note that the Homeroom courses at New Trier High School consisted of the core subjects for this grade level. Non-Homeroom courses were generally elective in nature, and were probably not of same difficulty level as were the Homeroom courses. While comparable levels of each subject were compared between the Homeroom and non-Homeroom classes it is still reasonable to assume that differences in degree of difficulty, style of grading, and instructor-student mix of the nature previously mentioned can, and do, exist.

Amos Alonzo Stagg High School

Project Homeroom courses as a whole

Amos Alonzo Stagg High School implemented Project Homeroom across three subjects: English, German, and World History. Grades for these classes were reported five times per semester. In the first quarter of the first semester of 1991, History grades ($M = 8.47$) were significantly higher than either German ($M = 5.97$), English ($M = 6.05$), or the non-Homeroom courses agglomerate ($M = 6.76$, $F_{3,459} = 11.67$, $p < .0001$). When the Homeroom course grades were accumulated and compared to non-Homeroom grades, the Homeroom grades ($M = 6.83$) were slightly greater than the non-Homeroom grades ($M = 6.76$). This difference, though, was not sufficiently large to be considered statistically significant ($t_{461} = -.25$, $p = .802$).

At the end of the first quarter, English ($M = 8.08$) had the highest grades, followed by History ($M = 7.61$), the non-Homeroom aggregate ($M = 5.66$), and German ($M = 4.75$, $F_{3,455} = 21.83$, $p < .0001$). In this grading period Project Homeroom course grades ($M = 6.82$) were, on the average, significantly higher than those for non-Homeroom classes ($M = 5.66$), $t_{457} = -3.78$, $p < .001$).

At the beginning of the second quarter of the first semester, History grades ($M = 9.30$) were again significantly higher than all other grades ($F_{3,457} = 22.85$, $p < .0001$). German grades ($M = 4.87$) were lowest again, though this time statistically significantly

less than grades from all other courses being compared. English grades ($\underline{M}$ = 7.41) improved slightly over non-Homeroom grades ($\underline{M}$ = 7.07), but this difference was not statistically significant. In the overall comparison of aggregate grades Homeroom grades ($\underline{M}$ = 7.20) were slightly higher than non-Homeroom grades ($\underline{M}$ = 7.07), but this difference was again not statistically significant.

At the end of the first semester (Fall, 1991) History and English grades remained significantly higher than average grades for either German or the accumulated non-Homeroom classes ($F_{3,444}$ = 19.99, $p < .0001$). In the aggregated comparisons, the Homeroom classes ($\underline{M}$ = 7.44) maintained a marginally significant advantage over non-Homeroom classes ($\underline{M}$ = 6.89, t_{446} = -1.92, p = .056). German ($\underline{M}$ = 4.75) remained fairly stable and at the bottom of the list with low grades throughout the semester.

In the first grading period of the second semester (Spring 1992) History grades($\underline{M}$ = 8.39) remained significantly higher than the averages in both German ($\underline{M}$ = 5.34) and non-Homeroom courses ($\underline{M}$ = 6.71, $F_{3,458}$ = 10.73, $p < .0001$). Other than English and History changing places in the order from lowest to highest grades, there were no other significant pairwise comparisons. When the aggregated courses were compared, the Homeroom course grades ($\underline{M}$= 7.04) were slightly higher than those of the non-Homeroom courses ($\underline{M}$ = 6.71). This difference was not statistically significant (t_{460} = -1.01, p = .315).

By the end of this quarter, English grades ($\underline{M}$ = 8.87) were again significantly higher than all other grades ($F_{3,451}$ = 18.81, $p < .0001$). History grades ($\underline{M}$ = 7.28) were also significantly higher than non-Homeroom ($\underline{M}$ = 5.64) and German ($\underline{M}$ = 5.55) grades. It is important to note that thus far all grades in the project Homeroom classes continued to improve. All Homeroom classes ($\underline{M}$ = 7.23) had significantly higher grades in this grading period than did the non-Homeroom classes ($\underline{M}$ = 5.64, t_{453} = -4.64, $p <$ .001).

A trend seems to become apparent with the beginning of the next grading period. One course's overall grade average tends to out remain higher than all the others, whereas at the beginning two or more courses predominate. At this next grading period all of the courses were significantly different from each other ($F_{3,451}$ = 9.01, $p < .0001$). History ($\underline{M}$ = 8.27) and English ($\underline{M}$ = 8.00) had significantly higher grades that the other two courses. Non-Homeroom course grades ($\underline{M}$ = 6.88) were also significantly higher than German grades ($\underline{M}$ = 5.92). Overall, though, the difference between non-Homeroom courses and Homeroom courses ($\underline{M}$ = 7.38) was not significant (t_{453} = -1.63, p = .103).

At the end of the first year at Stagg High School the differences among grades in the various courses continued to be statistically significant ($F_{3,452}$ = 15.34, $p < .0001$), with the direction of those differences not having changed. The non-Homeroom class grades ($\underline{M}$ = 6.60) were, on the average, significantly lower than the Project Homeroom class grades ($\underline{M}$ = 7.35, t_{454} = -2.44, $p < .015$).

Over the course of the entire year significant differences were found to exist among the grades for all of the courses, ($F_{3,3655}$ = 100.98, $p < .0001$). The average

History grades (M = 8.32) were significantly higher than all other grades. Likewise English (M = 7.74) grade averages were significantly higher than those of all other courses except History. The non-Homeroom aggregated course grades (M = 6.53) were significantly higher than German grades only. German grades (M = 5.42) were consistently the lowest, although all grades tended toward improvement over the course of the year. When Homeroom courses were aggregated and compared to non-Homeroom courses across the entire year, Homeroom course grades were found to be significantly higher than those of non-Homeroom courses, (t_{3657} = -5.65, $p < .001$).

English

Roughly 20% of the Homeroom students earned an A, B, C, or D in the first quarter. The remaining 20% were scattered among the half grades. Nearly 10% earned a grade of B+, the rest earned C's. Grades improved as the year went on until at the end of the first semester the group was nearly evenly divided among A's, B's and C's. Homeroom students earned consistently more A's (and less F's) than their non-Homeroom peers. However, Homeroom students' grades in non-Homeroom classes were generally higher than their grades in Homeroom English.

The grades in the second semester were of the same pattern observed in the first semester. Homeroom students tended to earn predominantly A's and B's. The non-Homeroom students earned more B's and C's throughout. Homeroom students earned a range of grades from A to C in their non-Homeroom courses, though they did consistently better in Homeroom English. Both Homeroom and non-Homeroom students started the second semester with 8% and 11% receiving F's. By the end of the year, both groups had improved their grades to 3% and 8% receiving F's respectively.

German

In the first half of the first semester, non-Homeroom German students were earning considerably more A grades than were the Homeroom students. By the end of the semester, though, the grades of two groups were fairly even. Homeroom students tended to earn B's and D's while their non-Homeroom peers were more consistent in earning B's and C's. Homeroom student grades in the Project Homeroom German class were quite compartmentalized in comparison to their non-Homeroom classes, with students earning a greater variety of grades along the length of the scale in their non-Homeroom classes.

In the second semester Homeroom German students seemed to peak at the end of the semester. At first students were earning B's, C's and D's. By the end of the semester the majority were earning B's and C's. Similar trends are noticeable among the non-Homeroom courses and students. It is interesting to note that Project Homeroom students began the semester with 11% failing and ended with only 4% failing, while the non-Homeroom students began and ended with 7% of their class receiving failing marks.

World History

Homeroom students earned a majority of A's and B's in this class. Their peers in other classes tended to earn B's and C's as well as half grades in between. Homeroom students did consistently better in this class than they did in the non-Homeroom classes as a whole. Homeroom History grades seemed to peak at the ends of each quarter. This effect is less noticeable for the non-Homeroom classes.

In the second semester Homeroom students overwhelmingly earned A's and B's while their non-Homeroom peers earned B's and C's. Homeroom students in non-Homeroom classes earned slightly lower A's and B's. Rates of failing grades were inconsistent across the term. In general, Homeroom students outperformed their peers in non-Homeroom History and themselves in their non-Homeroom classes.

Summary

Project Homeroom at Stagg did not involve math and science as part of its curricular intervention. The lack of these courses could very well explain the disparity between Homeroom and non-Homeroom performance by Homeroom students. It is interesting to note that students did exceedingly well in Project Homeroom World History. Throughout the course of this first year of the evaluation the researchers have heard time and again how difficult this course was. The course seems to have been just challenging enough to make these students shine.

Again, care must be taken in interpreting these results, since the Homeroom curriculum was predominantly comprised of core courses. While the Stagg Homeroom curriculum included the "elective" of German this addition did not help in raising the overall grade averages in the program. Rather, it was in German class that students, on the average, performed their worst.

Summary

Analysis of the grades of Project Homeroom students across the three participating schools reveals several interesting themes. With only a few exceptions it appears that Project Homeroom students received lower grades in their Project Homeroom courses that they did in their non-Project Homeroom subjects. This finding is perhaps best understood when it is considered that Project Homeroom included a majority of the student's core courses, with the bulk of their non-Project Homeroom subjects being electives. In only Amos Alonzo Stagg High School were the core subjects of math and science not part of the Project Homeroom curriculum. It is also only in that school that the grade difference between Project Homeroom subjects and non-Project Homeroom subjects were not statistically significantly different. Our conclusion is that these differences are a result of differences in the actual (or perceived) difficulty level between core subjects (such as English, Math, Social Sciences, and Science) and elective subjects, and not due to Project Homeroom effects.

This conclusion is reinforced when student performance in the Project Homeroom subjects is compared to non-Project Homeroom students' performance in comparable but

not Project Homeroom classes. The trend is clear that Project Homeroom students did as well as or poorer than their peers taking the traditional curriculum. Project Homeroom in that sense has proven to be a challenge for both students and teachers, with the additional effort of the technology being reflected in the students' grades.

We would like to reiterate our previous cautionary statements. Grades tend to be a highly subjective measure of student learning and performance. Additionally, this comparison could not be balanced for student prior ability or between instructor teaching or grading differences. Further this is the first year of the Project and some portion of any effects seen may be due to the overall excitement of a new program or a desire to demonstrate the Project as successful. The real impact of Project Homeroom grades will become known if the trends observed during the first year can be maintained and strengthened during subsequent years.

How has Project Homeroom impacted students' attendance?

The number of days each Project Homeroom student was absent was examined in order to answer the question of how Project Homeroom has affected average student attendance rates. The number of days each student was absent (by semester) was collected from the Project Homeroom students' report cards. In the case of Amos Alonzo Stagg High School, where absences are reported on a class by class basis, the number of days absent was a whole number average of the per class numbers. In addition each school was asked to provide an indication of the average number of student absences for the program class as a whole during the same period of time.

Two comparisons were performed for each school's data. The first sought to determine if the rate of student absence changed for the Project Homeroom students over the course of the year. The average number of absences for the first semester (Fall 1991) was compared to the average number of absences for the second semester (Spring 1992) using a two sample t-test. In addition, the average number of absences for each semester was compared to the average for the class using the figures provided by each school (also using a t-test as appropriate).

Maine East High School

Project Homeroom students at Maine East High School were absent an average of 2.84 days during the Fall 1991 semester and an average of 3.01 days during the Spring 1992 semester. This change represented a slight, though statistically non-significant ($t = -.30$, $p = .767$), increase. Project Homeroom did not appear to have any effect in changing student absence rates from one semester to the next.

When compared to the Freshman class as a whole, however, the message is somewhat more encouraging. Freshman at Maine East averaged 3.26 days absent during the Fall 1991 semester and 4.29 days absent during the Spring 1992 semester. First semester comparisons of Project Homeroom students to their class as a whole reveals that Project Homeroom students were absent less, on the average, than their classmates. This difference, though, is not large enough to be considered statistically reliable ($t = -.46$, $p > .05$). The same is true, though to a larger degree, for the second semester absences ($t = -1.45$, $p > .05$). Although both of these comparisons were not large enough to reach statistical significance they do suggest that participation in Project Homeroom might be associated with a decrease in the average number of days absent.

New Trier High School

New Trier Project Homeroom students were absent for an average of 2.93 days during the Fall of 1991 and 2.57 days during the Spring of 1992. This decrease in the number of days absent was not statistically significant ($t = .73$, $p = .466$). As with Maine High School, Project Homeroom at New Trier appears only to suggest that student participation tended to decrease that average absence rate from one semester to the next.

New Trier High School indicated that its average daily absence rate ranged from three to five percent throughout the course of the year. Given the number of days in

each semester this would result in from 2.7 to 4.5 days of absence on the average. Although exact figures for the Sophomore class were not available (preventing exact statistics from being calculated) it is clear that the absences accumulated by the Project Homeroom students were well within the usually generated by New Trier students. Project Homeroom students are on the bottom portion of this distribution, again indicative of a theme that tended to show that Project Homeroom students were absent fewer times than their non-Project counterparts.

Amos Alonzo Stagg High School

Students in the Project from Stagg High School exhibited the lowest overall absence rate, averaging 2.05 days during the Fall 1991 semester and 1.89 days during the Spring 1992 semester. This decrease over the course of the year was not statistically significant, although it did tend in the direction of fewer absences as the year went on.

Data on overall student average days of absence was available only for the school as a whole. Overall Stagg High School students experienced 4.80 days absent during the Fall 1991 semester and 4.45 days during the Spring of 1992. Project Homeroom students had statistically significantly fewer absences during both semesters reported ($t = -4.30$, $p < .001$ and $t = -3.33$, $p < .001$). Although impressive, a note of caution should be interjected. The overall figures provided by Stagg High School were for the entire student body during the year, rather than just the Freshman class. It is possible that other grade levels might have experienced higher absence rates for reasons completely disconnected with Project Homeroom. While it is apparent that the average number of days absent for Project Homeroom students is quite low, and probably is below even that for the Freshman class as a whole, it is perhaps not as large as the whole school comparison might suggest. Overall Project Homeroom students at Stagg do appear to be absent from school less often than their non-Project peers.

Summary

Analysis of student absences seems to suggest that Project Homeroom might be encouraging participating students to be absent from school less frequently than non-Project counterparts. Changes from the first semester to the second, as well as comparisons between Project Homeroom students and non-Project Homeroom students, are for the most part not statistically significant. Accordingly, while there is a suggestion of increased attendance in Project Homeroom students across the three schools it is not so strong as to allow a reliable statement that Project Homeroom decreases student absences.

What Do Participants Like The Most/Least About Project Homeroom?

As a final item in the analysis participants were asked, on both the first and second written surveys, to indicate what they liked the most and least about their Project Homeroom experience. Since the first survey was given near the middle of the year these questions provided some insight into how they perceived the first semester to have gone. The second survey, distributed at the end of the school year, provides a summary for the entire first year's Project Homeroom activities.

The first section that follows presents a summary of the responses to two questions on the first survey, with the second section presenting responses to two questions from the second survey. While much of the information given in response to these items has already been stated and summarized previously in this report it is useful to bring it all together as a final indication of how the program went during its first year of operation.

In the same vein respondents were also asked to indicate if they would want to continue with Project Homeroom for a second year, and to explain their reasons for wanting to continue or discontinue. Students and parents also indicated what, if anything, could be done to improve the project in the next year. Responses to these items are presented last in this section.

Question 1/8: What is the worst thing you could say?
Question 1/9: What is the best thing you could say?

Maine East: Students

Students were to say what was worst and then best about Project Homeroom in the last questions. "Worst" problems at the time of the survey were problems still current (42.6) and involved information services and the network (39.7%) or a generalized lack of organization (22.1%), especially in getting the program started. Working with the same group of students and teachers was also seen as a "worst" aspect and, by a few, the program was seen as boring and the work as being too hard.

"Best" traits of the Project were the ever-popular idea of having a free computer (23.9%), learning to use a computer (19.7%), having access to Prodigy (18.3%), and doing school work on the computer (12.7%). Many students saw Project Homeroom as being a fun thing to do (14.1%), a tool to improve interaction with teachers and to improve grades and personal motivation. Examples of student responses include: "It (Project Homeroom) makes learning more fun." "The computer enables you to communicate with other people. It makes it easier to do school work."

Maine East: Parents

Parents were also asked to name "best" and "worst" things about Project Homeroom. As with their students, "worst" things usually revolved around problems with technology. Not using the computer enough (11.9%), lack of communication with

the school (11.9%) or overall disorganization, especially in getting the program started (15.3%) were other "worst" examples. One parent stated that there is "not enough homework on the computer," and that "parents are not as involved as I thought they would be." Reinforcing concerns for a lack of parent involvement, another parent says, "I still feel lost using it (the computer) and feel I was not educated properly in its use."

As far as "best" things about the Project, parents described it as "a God-send," and that "Everyone in the family uses it (the computer)." Another parent stated that "It is an excellent computer training tool for the student. Because of the heavy involvement, using the computer should become second nature. This system should be adopted by all school districts at all levels." Many parents praise Project Homeroom as a way for their students to learn about the computer (34.4%) or to improve student motivation (20.3%) or as a way to do school work on the computer (20.3%). Increased communications with the school and the Project being perceived as a fun way to learn were other positives stated. As one parent said about his/her student, she is "more interested in doing her homework on the computer. There is more enthusiasm. I don't hear the usual 'I have homework blues.' She is excited and anxious to study and do her homework on the computer."

New Trier: Students

The "worst" things about the Project, according to the students were that it was too hard or they were given too much work (44.3%), or that there were disadvantages to group work (14.3%) or that there was an overall lack of organization with the school (15.7). Actual quotations stated that "they give you too much homework and all the classes are linked together with projects and reports so it is twice the work." Another student spoke of "technical problems at the beginning," but that the Project was "flowing more smoothly now." Over and over, students said that they received too much homework.

The "best" thing about Project Homeroom was related to the computer (9.6%), especially having use of a free computer (23.3%) and learning to use the computer (20.5%). Teachers were rated as a top "best" (24.7%) in the Project and the Project was perceived as being fun and interesting by another 24.7%. Students talked often about the "free computer," having "very nice teachers," and that "everyone is so close - we're like a family."

New Trier: Parents

"Worst" things about the Project, according to the 20 parents who answered the question, often revolved around problems with technology (15%) or perceived lack of organization, especially in getting the program started (20%). Others made comments about not using the computer enough (15%), working with the same students in groups (10%), classes are "socially restrictive" said a parent, or a lack of communication with the school (10%). A parent commented that "students are not interested in telling or sharing with parents about anything so it seems impossible for me to easily learn anything about the project or computer." Individual parents discussed scheduling problems, especially of electives and the desire to incorporate alternative subjects within

the Project's core curriculum. Two parents found the work to be too easy or not a great enough demand on student efforts. The project "may promote procrastination since much of the work can be done late at night, at home and through the bulletin board," commented a parent. One parent felt the program was not long enough.

As far as "best" things about the Project, of the twenty responding parents, twelve talked about some aspect of the computer and the learning of computer skills. Ten parents were happy with their student's improved motivation, school performance and grades, five parents liked having their child do school work on the computer, and two others appreciated the teachers and increased communication with the school. One parent felt that work in the Project was too demanding and hard. Parents made statements like: "Project Homeroom seems to have endless possibilities." "My daughter has developed skills and abilities beyond my wildest dreams." "Using the computer helps to 'hook' students into learning" and "integrates technology with the curriculum." In general, parents were pleased with their student's increased "interest in learning and schoolwork."

Amos Alonzo Stagg: Students

Looking at the negative aspects of Project Homeroom, 15.3% named a specific subject as the worst part and 23.6% said the work was too hard. Students complained about "homework every night," that they "should be able to use the computer more in school," and that "the field trips are the worst."

On the other side, "everything about it is wonderful," and "I like how the teachers are so involved with us and that they want us all to succeed." Other students commented about the field trips and how they feel "special" and are making a lot of new friends. Computers were seen as the best aspect of the Project by 18.7% of the students, 16% like Prodigy best, and 28% find the Project to be generally fun and interesting. Teachers are viewed as being most important by 20% of the students and field trips by still another 12%.

Amos Alonzo Stagg: Parents

The "worst" and "best" things about the Project found that computers were not used enough (12.2%) and a lack of organization within the school (16%). Parents talked about "not having equipment on time;" or about how the program was "not moving as fast as I had hoped."

On the "best" things about the Project, learning about the computer was a plus in the eyes of 31.5 % of the parents, 18.5% as a fun experience, another 18.5% as a way to increase communications with the school. "It can influence their future career choices and options."

Question 2/5: What have you liked the least?
Question 2/6: What have you liked the most?

Maine East: Students

Students were asked what they liked least and most about Project Homeroom. Things liked least referred to the network (16%) or to things at school such as specific subjects (8.6%), field trips and projects (9.9%), working with the same group (9.9%), or the amount and level of work assigned (9.9%). "We didn't do as much as I would have thought," was one student's response.

On the positive side, students spoke often of free computers (28.6%) and software, learning about the computer (13%), making new friends, group work (10.4%), and their teacher (7.8%), "teachers that understand." Many students like Prodigy (22.1%) as well.

Maine East: Parents

Parents listed what they liked least about Project Homeroom and included "lack of communication between student and teacher," that the Project "hasn't lived up to what we were told in the beginning," that "it limits the choices of classes," and that it has a "slow response to technical problems." Ten (26.3%) of the 38 parents who chose to respond talked about problems with the information services or the network and five (13.2%) reiterated that the Project was not what it was said to be.

What parents liked most about the Project included Prodigy (10.5%), learning to use the computer (26.3%) and having use of a free computer (18.4%). Parents said things like: Project Homeroom "has brought classroom work and work on the computer together;" "It has kept my son interested in working on the computer;" it offers "opportunity for increased parent/teacher communication, and is also a chance to become involved with my son's education."

New Trier: Students

What have you liked least about Project Homeroom? Students wrote about "a lot of homework and too many tests;" that it was "at times too hectic;" or that they "don't like being isolated with some people." They commented about "having to wait too long to get everything working;" and that they disliked "all the group projects. Some are ok but (there are) too many - need to work independently sometimes." While a few respondents still complained about technology, (8.1%), most complained about program specifics, such as field trips, (8.1%), teachers (4.8%), specific subjects (8.1%), and the disadvantages of group work (14.5%). The majority of the students said that work was too much or too hard (32.3%). A few discussed a lack of organization or communication with the school. Two complained about New Trier's "leveling" system and five were tired of being evaluated through surveys.

What students liked "most" about the Project often had to do with learning to use the computer (19.7%) or having access to free computer use (16.4%). Teachers in

general (29.5%) and increased access to teachers, along with interactions with peers and group work were other reasons to like the Project. Students often talked about the "closeness of teachers and students," the "free computer," the "integration with the computer," and "the friends I made."

New Trier: Parents

When asked what they liked least about Project Homeroom, seven of the sixteen who responded talked about problems with technology. Four had nothing bad to say about the Project. One each felt that not enough work was done on the computer, or that group work was a disadvantage, or that parents should be more involved. A parent said, "We parents did not learn to use the computer. We were not encouraged enough to use it." Four parents were displeased with the lack of organization of the Project or the school. One mentioned the "slow start with computers." Two discussed New Trier's "leveling" system.

What parents liked "most" about the Project was learning to use the computer (40%) and having access to free computer use (13%). Parents talked about the teachers (26.7%) and one described the "great teachers." Others mentioned liking a specific subject, or peer interactions, the integration of subject matter, improved student performance, or increased access to teachers.

Amos Alonzo Stagg: Students

Looking at the negative aspects of Project Homeroom, 15.3% named a specific subject as the worst part and 23.6% said the work was too hard. Students complained about "homework every night," that they "should be able to use the computer more in school," and that "the field trips are the worst."

On the other side, "everything about it is wonderful," and "I like how the teachers are so involved with us and that they want us all to succeed." Other students commented about the field trips and how they feel "special" and are making a lot of new friends. Computers were seen as the best aspect of the Project by 18.7% of the students, 16% like Prodigy best, and 28% find the Project to be generally fun and interesting. Teachers are viewed as being most important by 20% of the students and field trips by still another 12%.

Amos Alonzo Stagg: Parents

The "worst" and "best" things about the Project found that computers were not used enough (12.2%) and a lack of organization within the school (16%). Parents talked about "not having equipment on time;" or about how the program was "not moving as fast as I had hoped."

On the flip side regarding the "best" things about the Project, learning about the computer was a plus in the eyes of 31.5 % of the parents, 18.5% as a fun experience, another 18.5% as a way to increase communications with the school. "It can influence their future career choices and options."

Question 2/2: Would you continue with Project Homeroom next year?

Maine East: Students

If given the choice, 48 of the 84 students said they would continue with Project Homeroom next year. Reasons for continuing the program had to do with the computer in general (16.5%), learning to use the computer and getting free use of a computer (19%). A student said, "I really love working on the computer. I can do more with my computer. I like to work on it because I am comfortable with it." As a generalization, 21.5% found the Project to be a fun experience. "It is fun and we learn to work together." On the negative side and reasons not to continue the Project next year, 21.5% found the program to be boring or offering too much work (6.3%). "I feel we are too limited and we are being experimented on, which could effect our future mostly negatively."

Maine East: Parents

Would parents continue the program next year if given the choice? Forty one said "yes." Reasons for continuing included having a free computer (15.2%), and simply because Project Homeroom is fun (27.3%). Examples of parent responses: "I think it is a wonderful learning experience for my child and she will be able to use it her whole life." "We all enjoy using the computer and having access to Prodigy." "It takes the drudgery out of homework." One individual noted the need for alternative subjects within the core curriculum of the Project.

New Trier: Students

Would the students continue Project Homeroom if given the opportunity? Thirty students said "yes," and referred to the computer (10.2%), usually learning about (11.9%) or having access to a free computer (3.4%). Others gave a variety of reasons for wanting to continue, such as that the program is fun and a great opportunity (22%), and that it assists the student by motivating the student and preparing him/her for the future. Teachers were highly spoken of (18.6%) as were the benefits of working within a group (10.2%). Reasons for not wanting to continue the Project found group work to be a disadvantage (15.3%), the work too hard (11.2%), or scheduling too difficult, especially for scheduling electives (10.2%). Two students talked about the Project's lack of organization and one student felt that his/her grades had lowered because of participation. A student said. "The work has doubled because of the regular curriculum and computer work. It's a lot more confusing." Another said "I feel too isolated from the rest of the school." On the positive side, students often said, "I like the teachers," and one added that it "helps me to be more organized. Teachers are extremely helpful."

New Trier: Parents

Would parents continue the program next year if given the choice? Fourteen said "yes," wanting their students to continue learning about the computer, to learn in groups and because they felt it was a good opportunity. They felt that their student's communication skills had improved and that participation would improve the student's

education and future options. Parents said, "I think this was a wonderful opportunity for the student to enforce their knowledge of technology in addition to their class work;" and "My daughter enjoyed the assignments done with a group. The teachers are great! She enjoys using her computer;" and defined Project Homeroom as "a positive learning experience." Of the five who said they would not continue the program, reasons given were that the program was boring, did not reflect the student's personal efforts or that no help was given when needed. Parents were asked to describe a collaborative group effort. Fourteen chose to answer the question. Three discussed group interaction or improved motivation. Four felt that collaborative efforts were interesting for students. Eight found group work beneficial. "It was a good, positive experience," said one parent. Two, though, said that the same students do all of the work, and one parent felt that group collaboration decreased communication.

Amos Alonzo Stagg: Students

If given the choice to continue Project Homeroom, 56 said "yes." Parents saw the program as being good for the student's future (16.2%) or as an overall fun learning experience (29.4%). Those who would not choose to again join the program, found it to be too hard or boring (17.6%) or just not any fun (13.2%). Actual student responses spoke positively of the Project and said things like: "it's fun. I like to work in different groups and the trips;" "I like having a computer at home;" "My grades are way better;" "It's really cool and a lot of hard work but still fun."

Amos Alonzo Stagg: Parents

If given the choice, 49 parents said they would continue with Project Homeroom the following year. Generally, parents found the program to be "interesting, educational, informative." More than 29% of the parents gave a general positive response for wanting to continue the program. One parent stated that "the Project needs one more year to see if it is effective." Another said that : "It is good for the kids to learn how technology can be used to enhance school work." On the negative side, one parent felt there was "too much stress on the child to do work."

Question 2/7: How can Project Homeroom improve next year?

Maine East: Students

Can Project Homeroom be improved next year? The school local area network (LAN) was the target of the most responses (40%), followed by improving organization within the school (11.7%). Students said that they want "more contact with teachers" and to "do more interesting projects" as well.

Maine East: Parents

Twelve of the 36 parents who chose to answer this question talked about the School local area network (LAN). Other improvements suggested improved communications with the school and more school organization. A parent stated the desire to "interface with my computer at work."

New Trier: Students

Students were asked how Project Homeroom could improve next year. Ten of the 52 who chose to respond (19.2%) said they wanted to use the computer more. Nine felt there was too much work or that it was too hard. Thirteen (25%) discussed the need to be better organized and two students ridiculed the need to be evaluated with surveys. One student felt the program was not long enough. A student said: "Make us do more homework in the computer." Another reiterated the concern by saying they should be "taught how to use the computers more." Other comments included, "Get organized and use the computers more;" and called for a need to be "better organized."

New Trier: Parents

How can Project Homeroom improve? A parent requested "more use of the computer network." Four of the eleven who chose to respond talked about using the network, learning more computer skills and increasing understanding of technology. Two respondents discussed the advantages of group work and other fun aspects of the Project. Increased parent involvement and using the computer more were suggestions made by parents. Parents also requested that the Project be more organized next year and that New Trier's "leveling" system be looked into.

Amos Alonzo Stagg: Students

Ways to improve the Project for the next year included reconsidering the difficulty and amount of work given (24.6%), looking again at field trips and projects (16.4%) as well as at the level of organization within the school (13.1%). A few students asked that levels of communications also be considered. One student referred to the need to have "less projects, more computer."

Amos Alonzo Stagg: Parents

How could Project Homeroom be improved next year? A few parents were still concerned about technology (16.3%), learning about the computer (9.3%) and increasing communication with the school (9.3%). Some felt that the computer was not being used enough (18.6%) and that the Project was not long enough (9.3%). One parent requested that the Project "extend through the senior year." Another suggested that "new programs must be introduced. The students may be bored with the same techniques used over and over again." Making a general statement, still another parent stated that "I am very satisfied with Project Homeroom and the teachers."

Summary

Students felt that some of the worst aspects of Project Homeroom were the way the project was organized at their particular school together with a perception that there was too much work (both in school and homework) associated with the Project. This feeling was reflected in responses from both the first and second surveys. Group projects was another dislike. Many students thought that working with a group was "OK" sometimes they often felt that there were too many group efforts (with not all

students contributing equally) and that independent work would be good sometimes as well.

Some of the best aspects of Project Homeroom, as noted by the students, were the free computer and using the computer to complete assignments. Project Homeroom was also a fun experience is many students responses. Another best aspect for a great number of the students were the teachers in the Project. Students felt that computers improved communications with the teachers, that they "got to know" their teachers and felt like they could talk with them more easily about questions or problems in their work.

Students not wanting to continue with Project Homeroom echoed many of the same reasons found in the responses to the 'what is worst' section. Most felt that Project Homeroom was boring and that there was too much work. Students wanting to continue the Project into a second year cited the computers, the opportunity to learn to use the computers and the teachers associated with the Project as reasons. When discussing improvements that could be made to Project Homeroom students responses were quite varied and tended to be quite particular to specific efforts undertaken at each school. One uniform suggestion for improvement was a desire to see the computer used for school work and homework beyond just word processing of papers and assignments.

Some of the worst aspects of Project Homeroom for the parents were not getting the equipment on time (at the beginning of the year) and a perceived lack of organization by the schools and corporations on getting started. Some parents also indicated that there was a lack of communication with the school. A few parents at each school felt that Project Homeroom was too restrictive, both academically and socially, for their children. These parents felt it would not be best for their child to be with the same group of children throughout their Project Homeroom career. Further, they felt that their child's participation in Project Homeroom was limiting the number and kind of elective courses they might take.

Parents reported almost uniformly that the best aspect of Project Homeroom was the computer. They talked about the computer "bringing the family together", how they were also learning to use the computer, and how their child was now excited about doing homework. The parents also felt that the teachers involved with Project Homeroom were one of the Project's best features and that there was better communication with the school due to Project Homeroom.

Overall parents seemed to feel that Project Homeroom is a positive experience for their child and would like to see their child continue in the Project in future years. However, some parents felt that improvement was still needed to get the school's local area networks working correctly, that parent-school communications could be improved, and that there needed to be more programs involving parents in the use of the computer. Overall, despite a few areas of concern, both parents and students like the idea of Project Homeroom and would look forward to a second year of participation.

Overall Summary and Conclusions from Year One

The goals of Project Homeroom centered around two important educational concepts. The first has to do with the myth that learning can only occur at school. Through the use of technology, Project Homeroom strived to overcome the myth. Students, teachers and parents were linked through communication networks involving computers and telephones. Teachers could be contacted and could talk with students outside regular school hours, either by telephone or by electronic mail. As one parent so aptly put it, "Your child is connected with school and if he or she had a problem, there is always a teacher or a student that can be reached." "Prodigy," an electronic information service, was also made available to participants.

A second goal of Project Homeroom was to increase parent involvement with their student's learning, when involvement is usually lowest during high school. One parent summarized the inadequacies felt by parents: "Students are not interested in telling parents about anything..." In reflection of Project Homeroom, another parent stated that the Project added "another dimension to my relationship with my son..."

In general, both students and parents defined Project Homeroom in relationship to technology, at least a computer. Both were intrigued with the idea of gaining free access to a computer, especially students. Both viewed the Project as a "fun" new way of learning, especially about the computer. At the onset, most parents and students were excited about the new program, except for a small group of students that felt their parents had forced them into Project participation. After participation in the Project for one year, 63.7% of the students said they would participate again the next year, if given the opportunity, as compared to 87% of the parents. It was also noticed that students were far more in tune with and more willingly explained what was going on with their equipment. They reported problems and resolution more thoroughly then their parents, perhaps an indication that they were more aware of and more comfortable with technology than their parents.

Were there differences between students' and parents' perceptions of the Project? While parents were interested in educational outcomes, such as improved student performance and better grades, students were concerned with process, what was happening within the Project Homeroom group interaction, allowing some students to do more than their share of the work, and offering rewards that did not always match effort. Students asked about subjects in the Project curriculum and wanted more time on the computer and less time doing non-computer projects. They looked at group interaction as one way to improve communication skills, for some, and as an added social "perk" for others. Parents, on the other hand, offered responses that strongly supported group collaboration and interdisciplinary studying of subjects, but without an understanding of what was actually happening.

Many parents who discussed the Project with us placed faith in the Project with the hope that their students would be motivated to raise their grades and become better prepared for a world of technology. This is evidenced by the high percentages of parents who would continue with the Project if given the opportunity. Over and over the message came across that parents want to increase their communication with the

school and hoped that the Project would allow that to happen. Those parents asked more than once for increased involvement with the school or with the Project.

It seems that while parents are concerned with outcomes (students who are prepared for the future), students are concerned with the process. A common negative theme among students was that Project expectations were too high, work was too hard and there was too much to do. Parents rarely talked about the difficulty of the work except in cases where they felt their student was not working up to potential. Students complained about specific teachers, subjects and that the Project was boring. Parents complained about promised communication with the school that did not seem up to speed. Students loved using the telephones and electronic mail, and spoke highly of Prodigy. Parents rarely mentioned Prodigy but detailed the combined corporate and school effort.

Students and their parents did agree on a couple of main points. Both sets of respondents expected to learn about computers during Project Homeroom. Both also viewed the Project as a way for students to do their school work on the computer. Especially in a couple of the schools, both were concerned about the status of the Local Area Network (LAN) or about information services in general. When equipment was not working, everyone was frustrated, and usually counted on teachers to "fix" whatever was not working. Oftentimes, other students also helped to fix problems, a situation which was highly recognized by students but hardly even mentioned by parents. Both students and parents were also frustrated with how long it took to get Project Homeroom started in the fall and indicated concern about the Project's organization. Both, especially students, thought it was great that they had free access to computers in their homes and school.

Did Project Homeroom actually delivered to students and to their parents what was expected? As has already been discussed, participants, at the start of the program, defined Project Homeroom expectations in terms of computers: learning about computers and having free use of a home computer. Two other concepts, doing school work on the computer and enjoying an interesting and fun new experience, were other Project expectations. The second written survey indicates that these expectations were generally fulfilled. But expectations grew. This could have been due in part to promises made about Project Homeroom that did not seem to be delivered in full. Parent-participants expected a greater communication link with the school then they felt they received. They wanted their children to be better educated and more prepared for the future. They wanted their children to be more motivated, more highly performing and making better grades than ever before. Even so most parents wanted to participate in the Project again next year.

Students, who are generally very social while in high school, generally liked the idea of working in a special group, going on field trips, studying special subjects and doing projects. But as the year progressed, they said they were bored, and that, for some, group work was burdensome because a few got stuck doing all the work. Those who liked the Project wanted to stay with it. They liked the teachers and the computers.

Early on, there were technical problems with computers and printers, telephones and modems, with Prodigy and networks. All respondents kept reminding Project organizers that they had not forgotten how long it took to get the Project started in the fall and that they do not like it when technology is not immediately up to speed. By the end of the school year, most of the equipment problems were ironed out except in a couple of locations where the local area network (LAN) was still not working properly as of the June survey.

As initial technological problems were alleviated, students appeared to have settled into their new style of school and home work. Responses from the June survey and later interviews suggested that when something went wrong, it was the student, with the help of a teacher or another student, who generally corrected it. In many cases, there was a lack of information about technological problems. This was evidenced by the more thorough reporting by students than their parents of problems. Some parents keep raising the parent involvement theme. They are probably concerned that after a full year with Project Homeroom, they feel little more involved then before the Project started. While not a highly frequent concept, it is a vital one as it nurtures one of the main goals of the original Project Homeroom, to involve parents in the educations of their high school children. The fact that parents want, more than their students, to continue the Project is another justification of parental desires for increased involvement and communication. This desire is also evidenced by parent responses that want Project Homeroom to last longer.

Overall, Project Homeroom is the Maine East, New Trier and Amos Alonzo Stagg High Schools has not been off to that bad a beginning. Each implementation experienced its share of start-up difficulties, and its share of victories. Much was learning about the technology, about school-corporation cooperation, and about planning and executing technology-based change. Whatever the next year will bring it will certainly see a group of professional educators and students seasoned by a year of trial and learning. Readers are cautioned, therefore, not too consider too much gained or lost through this first year's experience. Rather we believe that this past year has been just that – an experience in education for all concerned. We are looking forward to what year two can bring, and to the actualization of the potential that is Project Homeroom.

Appendices

Project Homeroom Student, Parent, Teacher and Administrator Survey #1

Project Homeroom Student and Parent Survey #2

Survey #1 and #2 Textual Response Questions

Textual Responses Analysis Conceptual Map

Maine East Tables: Comfort, Use, Percent of Time and Textual Responses

New Trier Tables: Comfort, Use, Percent of Time and Textual Responses

Amos Alonzo Stagg Tables: Comfort, Use, Percent of Time and Textual Responses

All Schools Tables: Comfort, Use, Percent of Time and Textual Responses

"School Structured Computer Learning Activities and Participation in Out-of-School Structured Activities", a paper accepted for publication in the Journal of Research on Computing in Education

"Causes Underlying Minimal Parent Involvement in the Education of the Children", a paper accepted for presentation at the Annual Meeting of the Mid-Western Educational Research Association (October 16, 1992)

Survey #1: Students, Parents, Teachers and Administrators

(survey follows on next seven pages)

Project Homeroom Evaluation

1 ~ Student 2 ~ 3 ~

Thank you for participating in Project Homeroom! Researchers at Illinois State University are working with your school district to evaluate the Project during its two years of operation. Your honest responses to this survey are part of that important evaluation plan. Please be assured that your individual responses will be kept absolutely confidential. Your personal information will be used only to determine how to identify those components of Project Homeroom that work best, and how to improve those components in future years. **Thank you!**

What is your gender? ☐ Female ☐ Male

What year were you born? 19__ __

Do you work in a part-time job? ☐ Yes ☐ No

If Yes, about how many hours each week? _____

How do you usually get to school?

- ☐ Walk
- ☐ Ride a Bike
- ☐ Take the Bus
- ☐ Get a Ride
- ☐ _____

Do you usually?

- ☐ Bring lunch from home
- ☐ Buy your lunch at school
- ☐ Go out for lunch
- ☐ _____

What is your most favorite subject in school? _____

What is your least favorite subject in school? _____

What is the subject you do best in at school? _____

What is the subject you do worst in at school? _____

What are your current plans for when you finish High School?

- ☐ Go to College Major: _____
- ☐ Get a Job Title: _____
- ☐ Enlist in the Military Branch: _____
- ☐ Other (please describe): _____
- ☐ Don't know yet

Project Homeroom Evaluation

Parent(s) of 1 ~ Student 2 ~ 3 ~

Thank you for participating in Project Homeroom! Researchers at Illinois State University are working with your school district to evaluate the Project during its two years of operation. Your honest responses to this survey are part of that important evaluation plan. Please be assured that your individual responses will be kept absolutely confidential. Your personal information will be used only to determine how to identify those components of Project Homeroom that work best, and how to improve those components in future years. Please return this survey to the school as soon as possible. **Thank you!**

Parent #1

Your gender: ☐ Female ☐ Male

What year were you born? 19 __ __

Your highest degree earned?
☐ Diploma/GED ☐ Bachelors
☐ Masters ☐ Doctorate
☐ Other: _____

What was your field of study in school?

_____

What is your current occupation?
☐ Executive or Administrative
☐ Professional Specialty
☐ Sales or Sales Support
☐ Technical or Administrative Support
☐ Food or Household Service
☐ Protective Service (Police or Fire)
☐ Farming, Forestry, or Fishing
☐ Precision Production or Repair
☐ Operator, Fabricator, or Laborer
☐ _____

Are you now employed?
☐ Full Time ☐ Not Employed
☐ Part Time ☐ Retired

Parent #2

Your gender: ☐ Female ☐ Male

What year were you born? 19 __ __

Your highest degree earned?
☐ Diploma/GED ☐ Bachelors
☐ Masters ☐ Doctorate
☐ Other: _____

What was your field of study of school?

_____

What is your current occupation?
☐ Executive or Administrative
☐ Professional Specialty
☐ Sales or Sales Support
☐ Technical or Administrative Support
☐ Food or Household Service
☐ Protective Service (Police or Fire)
☐ Farming, Forestry, or Fishing
☐ Precision Production or Repair
☐ Operator, Fabricator, or Laborer
☐ _____

Are you now employed?
☐ Full Time ☐ Not Employed
☐ Part Time ☐ Retired

Are you: ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed

Which parent completed this survey? ☐ Parent #1 ☐ Parent #2 ☐ Both Parents together

How many people, including the parent(s) above, live in your household? _____ Persons

Please describe the people in your household (do not include the parent(s) listed above):

Person	Gender	Age	Grade in School or Occupation	Relationship to You
#1	M F	____	_____	_____
#2	M F	____	_____	_____
#3	M F	____	_____	_____
#4	M F	____	_____	_____

About how many miles is it from your home to the Project Homeroom school? _____ Miles

Is it a toll telephone call from your home to the Project Homeroom school? ☐ Yes ☐ No

Project Homeroom Evaluation

1 ~ Teacher 2 ~ 3 ~

Thank you for participating in Project Homeroom! Researchers at Illinois State University are working with your school district to evaluate the Project during its two years of operation. Your honest responses to this survey are part of that important evaluation plan. Please be assured that your individual responses will be kept absolutely confidential. Your personal information will be used only to determine how to identify those components of Project Homeroom that work best, and how to improve those components in future years. A self-addressed, stamped enveloped has been enclosed to return the completed survey. **Thank you!**

What year were you born? 19__ __

Are you: ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed

How many people, including yourself, live in your household? ____ Persons

Please describe the people in your household (do not include yourself):

Person	Gender	Age	Grade in School or Occupation	Relationship to You
#1	M F	____	_____	_____
#2	M F	____	_____	_____
#3	M F	____	_____	_____
#4	M F	____	_____	_____
#5	M F	____	_____	_____

About how many miles is it from your home to the Project Homeroom school? _____ Miles

Is it a toll telephone call from your home to the Project Homeroom school? ☐ Yes ☐ No

Tell us about your educational background:

Degree	Year Earned	Major Area or Concentration
☐ Diploma/GED	_____	_____
☐ Bachelors	_____	_____
☐ Masters	_____	_____
☐ Specialists	_____	_____
☐ Doctorate	_____	_____
☐ _____	_____	_____

Are you currently enrolled in school (taking courses yourself)? ☐ Yes ☐ No

If Yes: How many units have you earned since your last degree? _____

What is your program of study/major area? _____

When did you first start teaching? 19__ __

How many years have you taught (count only those years as a teacher)? _____

How many years have you been teaching at this district? _____

How many years have you taught in your current Project Homeroom subject area(s)? _____

Project Homeroom Evaluation

1 ~ Administrator 3 ~ 4 ~

Thank you for participating in Project Homeroom! Researchers at Illinois State University are working with your school district to evaluate the Project during its two years of operation. Your honest responses to this survey are part of that important evaluation plan. Please be assured that your individual responses will be kept absolutely confidential. Your personal information will be used only to determine how to identify those components of Project Homeroom that work best, and how to improve those components in future years. A self-addressed, stamped enveloped has been enclosed to return the completed survey. **Thank you!**

What year were you born? 19__ __

Are you: ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed

How many people, including yourself, live in your household? ____ Persons

Please describe the people in your household (do not include yourself):

Person	Gender	Age	Grade in School or Occupation	Relationship to You
#1	M F	____	_____	_____
#2	M F	____	_____	_____
#3	M F	____	_____	_____
#4	M F	____	_____	_____
#5	M F	____	_____	_____

About how many miles is it from your home to the Project Homeroom school? _____ Miles

Is it a toll telephone call from your home to the Project Homeroom school? ☐ Yes ☐ No

Tell us about your educational background:

Degree	Year Earned	Major Area or Concentration
☐ Diploma/GED	_____	_____
☐ Bachelors	_____	_____
☐ Masters	_____	_____
☐ Specialists	_____	_____
☐ Doctorate	_____	_____
☐ _____	_____	_____

Are you currently enrolled in school (taking courses yourself)? ☐ Yes ☐ No

If Yes: How many units have you earned since your last degree? _____

What is your program of study/major area? _____

When did you first start teaching? 19__ __

How many years have you taught (count only those years as a teacher)? _____

How many years have you taught at this district? _____

What subject(s) did you teach? _____

When did you first start administrating? 19__ __

How many years have you administrated (count only those years as an administrator)? _____

How many years have you been administrating at this district? _____

Project Homeroom Evaluation

1~ 2~ 3~ 4~

Before the Start of Project Homeroom

This page of the survey asks you questions concerning how much experience have you had with computers **before Project Homeroom began.** Please answer the questions on this page from what you remember about working with technology before the start of Project Homeroom.

How much did you use? Rarely				Often	Application	**How comfortable were you using?** Hardly				Very
1	2	3	4	5	Computer Games	1	2	3	4	5
1	2	3	4	5	Word Processing	1	2	3	4	5
1	2	3	4	5	Data Base	1	2	3	4	5
1	2	3	4	5	Spreadsheet	1	2	3	4	5
1	2	3	4	5	Communications	1	2	3	4	5
1	2	3	4	5	Math or Statistics	1	2	3	4	5
1	2	3	4	5	Calendar or Scheduling	1	2	3	4	5
1	2	3	4	5	Accounting or Financial	1	2	3	4	5
1	2	3	4	5	Computer Programming	1	2	3	4	5
1	2	3	4	5	Graphics	1	2	3	4	5
1	2	3	4	5	C.A.D. / C.A.M.	1	2	3	4	5
1	2	3	4	5	Tutorials or C.A.I.	1	2	3	4	5
1	2	3	4	5	Utilities	1	2	3	4	5
1	2	3	4	5	Integrated Packages	1	2	3	4	5
1	2	3	4	5	Other: _____	1	2	3	4	5

Before Project Homeroom began, had you used a computer at:

☐ Home? What brand/model? _____
Major application (from the list given above)? _____

☐ Work? What brand/model? _____
Major application (from the list given above)? _____

☐ School? What brand/model? _____
Major application (from the list given above)? _____

☐ Library? What brand/model? _____
Major application (from the list given above)? _____

☐ _____ What brand/model? _____
Major application (from the list given above)? _____

Before the school year started, what did you think Project Homeroom was?

Why did you decide to participate in Project Homeroom?

Project Homeroom Evaluation

1~ 2~ 3~ 4~

After the Start of Project Homeroom

These next two pages of the survey ask you questions concerning your use of computers since **Project Homeroom began.** Please answer the questions on this page from what you today feel about working with the technology of Project Homeroom.

How much do you use? Rarely				Often	Application	**How comfortable are you using?** Hardly				Very
1	2	3	4	5	Computer Games	1	2	3	4	5
1	2	3	4	5	Word Processing	1	2	3	4	5
1	2	3	4	5	Data Base	1	2	3	4	5
1	2	3	4	5	Spreadsheet	1	2	3	4	5
1	2	3	4	5	Communications	1	2	3	4	5
1	2	3	4	5	Math or Statistics	1	2	3	4	5
1	2	3	4	5	Calendar or Scheduling	1	2	3	4	5
1	2	3	4	5	Accounting or Financial	1	2	3	4	5
1	2	3	4	5	Computer Programming	1	2	3	4	5
1	2	3	4	5	Graphics	1	2	3	4	5
1	2	3	4	5	C.A.D. / C.A.M.	1	2	3	4	5
1	2	3	4	5	Tutorials or C.A.I.	1	2	3	4	5
1	2	3	4	5	Utilities	1	2	3	4	5
1	2	3	4	5	Integrated Packages	1	2	3	4	5
1	2	3	4	5	Other: _____	1	2	3	4	5

During a typical week, how many hours do you spend on the following activities?

Activities not involving the computer

___ "School" work at home
___ "Employment" work at home
___ Watching Television
___ Listening to the Radio
___ Listening to records, tapes, or CD's
___ Talking with friends on the telephone
___ Visiting with friends in person
___ Reading pleasure books or magazines
___ Doing a hobby, art or craft
___ Participating in a club or group activity
___ Participating in a sport or exercise
___ Relaxing (doing nothing at all)
___ Watching a movie, a concert or a play
___ Attending a sporting event

Activities using the computer at home

___ "School" work using the computer
___ "Employment" work with the computer
___ Communicating with an Administrator
___ Communicating with a Teacher
___ Communicating with a Parent
___ Communicating with a Student
___ Using the school's computer network
___ Working on PRODIGY
___ Playing games or other entertainment
___ Using your computer for other purposes (if any, describe below)

_____
_____
_____

What do you expect to get out of participating in Project Homeroom?

Project Homeroom Evaluation

1~ 2~ 3~ 4~

Have there been any problems with your computer or printer? ☐ Yes ☐ No

Please describe any problems you might have had, and if they have been resolved:

Have there been any problems with your telephone or modem? ☐ Yes ☐ No

Please describe any problem you might have had, and if they have been resolved:

Who has given you the most help when you have had a technical problem or question?

Overall, have your problems been resolved? ☐ Yes ☐ No

How would you describe Project Homeroom to a close friend of yours who is interested in the Project but does not know anything about it?

What is the worst thing you could say about Project Homeroom so far?

What is the best thing you could say about Project Homeroom so far?

Thank you for your assistance!

Project Homeroom Evaluation

1~ 2~ 3~ 4~

Survey #2: Students and Parents

(survey follows on next two pages)

Project Homeroom Evaluation Survey #2

1~ 2~ 3~ 4~

Thank you for participating in Project Homeroom! Your honest responses to this second survey are an important part of the continuing evaluation plan. Your name is printed above so we can follow your responses over the course of the Project; however, please be assured that your individual responses will be kept absolutely confidential. **Please answer the following questions based on how you feel today about working with the technology of Project Homeroom.**

How much do you use? Rarely				Often	Application	**How comfortable are you using?** Hardly				Very
1	2	3	4	5	Computer Games	1	2	3	4	5
1	2	3	4	5	Word Processing	1	2	3	4	5
1	2	3	4	5	Data Base	1	2	3	4	5
1	2	3	4	5	Spreadsheet	1	2	3	4	5
1	2	3	4	5	Communications	1	2	3	4	5
1	2	3	4	5	Math or Statistics	1	2	3	4	5
1	2	3	4	5	Calendar or Scheduling	1	2	3	4	5
1	2	3	4	5	Accounting or Financial	1	2	3	4	5
1	2	3	4	5	Computer Programming	1	2	3	4	5
1	2	3	4	5	Graphics	1	2	3	4	5
1	2	3	4	5	C.A.D. / C.A.M.	1	2	3	4	5
1	2	3	4	5	Tutorials or C.A.I.	1	2	3	4	5
1	2	3	4	5	Utilities	1	2	3	4	5
1	2	3	4	5	Integrated Packages	1	2	3	4	5
1	2	3	4	5	Other: _____	1	2	3	4	5

During a recent typical week, how many hours do you spend on the following activities?

Activities not involving the computer

___ "School" work at home
___ "Employment" work at home
___ Watching Television
___ Listening to the Radio
___ Listening to records, tapes, or CD's
___ Talking with friends on the telephone
___ Visiting with friends in person
___ Reading pleasure books or magazines
___ Doing a hobby, art or craft
___ Participating in a club or group activity
___ Participating in a sport or exercise
___ Relaxing (doing nothing at all)
___ Watching a movie, a concert or a play
___ Attending a sporting event

Activities using the computer at home

___ "School" work using the computer
___ "Employment" work with the computer
___ Communicating with an Administrator
___ Communicating with a Teacher
___ Communicating with a Parent
___ Communicating with a Student
___ Using the school's computer network
___ Working on PRODIGY
___ Playing games or other entertainment
___ Using your computer for other purposes (if any, describe below)

_____
_____
_____

Please continue on the reverse side

Have there been any technical problems with your equipment? ☐ Yes ☐ No

If YES, please check which piece of equipment was involved: ☐ Computer ☐ Monitor ☐ Keyboard ☐ Printer ☐ Modem ☐ Telephone

Please describe what the problem was and tell if it has been resolved:

Given the choice, would you continue with Project Homeroom next year? ☐ Yes ☐ No
Please explain:

Project Homeroom provided opportunities for students to work collaboratively on shared projects. Please describe and rate one example:

Project Homeroom combined learning across several different subject areas (ie. social science, english, etc.). Please describe and rate one example:

What have you liked <u>least</u> about Project Homeroom this year?

What have you liked <u>most</u> about Project Homeroom this year?

How can Project Homeroom improve next year?

Thank you for your assistance!

Survey #1 Textual Response Questions

#1: Before the school year started, what did you think Project Homeroom was?

#2: Why did you decide to participate in Project Homeroom?

#3: What do you expect to get out of participating in Project Homeroom?

#4: Have there been any problems with your computer or printer? Please describe any problems you might have had, and if they have been resolved.

#5: Have there been any problems with your telephone or modem? Please describe any problems you might have had, and if they have been resolved.

#6: Who has given you the most help when you have had a technical problem or question?

#7: How would you describe Project Homeroom to a close friend of yours who is interested in the Project but does not know anything about it?

#8: What is the worst thing you could say about Project Homeroom so far?

#9: What is the best thing you could say about Project Homeroom so far?

Survey #2 Textual Response Questions

#1: Have there been any technical problems with your equipment? Please describe what the problem was and tell if it has been resolved.

#2: Given the choice, would you continue with Project Homeroom next year? Please explain.

#3: Project Homeroom provided opportunities for students to work collaboratively on shared projects. Please describe and rate one example.

#4: Project Homeroom combined learning across several different subject areas (ie. social science, english, etc.). Please describe and rate one example.

#5: What have you liked least about Project Homeroom this year?

#6: What have you liked most about Project Homeroom this year?

#7: How can Project Homeroom improve next year?

Survey #1 and #2 Textual Responses Analysis Conceptual Map

I. Unspecified Responses
   A. 10 - No response
      20 - Meaningless response
      30 - Discussion of contractual obligations

II. Responses Discussing Technology
   A. Technology in general
      1. 100 - Technology in general
      2. 109 - Software in general
   B. Computer or printer
      1. 110 - Computer/printer in general
      2. 111 - Computer
      3. 112 - Printer
      4. 113 - Monitor
      5. 114 - Mouse
      6. 115 - Keyboard
      7. 116 - Marketing i.e. of IBM
   C. Telephone or modem
      1. 120 - Telecommunications in general
      2. 121 - Modem
      3. 122 - Telephone equipment/service
      4. 123 - Telecommunications services
   D. Information services and networks
      1. 130 - Information services in general/network in general
      2. 131 - Prodigy
      3. 132 - School Local Area Network (LAN)
      4. 133 - IBM's N.E.M.A.
   E. Other technology or technical issues
      1. 140 - Electrical failure

III. Responses Discussing Problems
   A. 200 - No problems/nothing bad/no worst about Project Homeroom
   B. 210 - Problem has been reported, current status unknown
   C. 220 - Problem is current
   D. 230 - Problem has been fixed (unknown by whom)
      1. 231 - Problem fixed by corporation
      2. 232 - Problem fixed by school
      3. 233 - Problem fixed by home

IV. Responses Discussing Helpful People
   A. 300 - No one
   B. 310 - School in general
      1. 311 - Teachers
      2. 312 - School technical support staff
   C. 320 - Corporation in general
      1. 321 - Corporation technical support
   D. 330 - Someone from home in general
      1. 331 - Myself
      2. 332 - Someone else in my immediate family
      3. 333 - Another student
      4. 334 - My parent/another parent
   E. 340 - A combination of the school and corporation

V. Responses Discussing Wanting to Participate in Project Homeroom
- A. Knowledge about Project Homeroom
  1. 401 - I "know" what Project Homeroom is
  2. 402 - I don't "know" what Project Homeroom is
  3. 403 - Project Homeroom is not what it was said to be
  4. 404 - I am curious about Project Homeroom
  5. 405 - No particular reason for participating
- B. Desires regarding Project Homeroom in general
  1. 410 - Project Homeroom and learning about/using the computer
  2. 411 - Having free computer, printer, equipment, etc.
  3. 418 - Improved/worsened peer interactions
  4. 419 - Integrating class subjects/interdisciplinary
- C. Desires regarding the learning environment
  1. 420 - Project Homeroom and increased access to teacher(s)
  2. 421 - Improve student performance/motivation/learn
  3. 422 - Improved/better grades/education
  4. 423 - Learning in (computer) groups/classes/labs
  5. 424 - Project Homeroom is like regular school
  6. 425 - Make school work different (easier/harder)
  7. 426 - Computers as teachers
  8. 427 - Individualized learning
  9. 428 - As an experiment
  10. 429 - For the entire family
- D. Generalized good perceptions about Project Homeroom
  1. 430 - Project homeroom is a great opportunity
  2. 431 - It is good for student in future
  3. 432 - The student had no choice about participating
- E. Reports of the parent-student relationship
  1. 440 - Parent made student participate
  2. 441 - Student decided/convinced parents
  3. 442 - Project Homeroom is not for parents, is for student
  4. 443 - I(we) don't use computer much

VI. Positive Opinions about Project Homeroom
- A. General positive opinions
  1. 500 - It is fun, interesting, good
  2. 501 - Don't know, unsure
- B. Opinions about the teachers, classrooms and programs
  1. 510 - Teachers in general
  2. 511 - Field trips/projects
  3. 512 - School work on computer
  4. 513 - I like computers
  5. 514 - I am making a good personal effort
  6. 515 - I like a specific subject
- C. Opinions about tracking and group work
  1. 520 - The same kids all day/benefits of group work
- D. Opinions about communications between school and home
  1. 530 - Increased communication with school
  2. 531 - Increased communication with home/at home
  3. 532 - Improved communication skills

VII. Negative Opinions about Project Homeroom
- A. General negative opinions
  1. 600 - It is not fun, boring/did not like
- B. Opinions about the teachers, classrooms and programs
  1. 610 - Teachers in general
  2. 611 - Field trips/projects
  3. 612 - I am not using the computer enough
  4. 613 - I do not like a specific subject
  5. 614 - I don't like IBM
  6. 615 - I do not like computers

C. Opinions about tracking and group work
    1. 620 - The same kids all day/disadvantages of group work
    2. 621 - Some kids do all the work
    3. 622 - It does not reflect my/student's personal effort
D. Opinions about communications between school and home
    1. 630 - Lack of communication with school
    2. 631 - Lack of communication with home/at home
    3. 632 - Decreased communication/general lack of communication
    4. 633 - Parent would like to be more involved
E. Opinions about the degree of difficulty of the program
    1. 640 - Too easy/did not learn much
    2. 641 - Too hard/ too much work
    3. 642 - No help/too little help
    4. 643 - No extra grading/extra credit for Project extra work
    5. 644 - Grade lowered because of Project Homeroom
F. Opinions about course selection and electives
    1. 650 - Difficulties in scheduling electives
    2. 651 - Want alternative subjects in Project Homeroom core
G. Opinions about organization of the project by the sponsors
    1. 660 - Lack of organization by school
    2. 661 - Lack of support by corporations
    3. 662 - It is not long enough
    4. 663 - It's a gimmick
    5. 664 - An overall lack of organization (getting started)
    6. 665 - Time/class length of Project Homeroom classes

VIII. Miscellaneous Comments
A. 700 - New Trier's "leveling" system
B. 701 - The Evaluator's Surveys
C. 710 - The project is keeping kids home at night

Maine East High School - Students
"How much do you use each application?"

Application	N	Before PH	Start Year 1
Computer Games	73	2.9 (1.4)	3.5 (1.5)a**
Word Processing	72	2.5 (1.5)	4.1 (1.1)a**
Data Base	72	1.7 (1.1)	3.0 (1.2)a**
Spreadsheet	73	1.6 (1.2)	2.6 (1.3)a**
Communications	73	1.6 (1.2)	3.0 (1.6)a**
Math / Statistics	73	2.0 (1.3)	2.5 (1.4)a*
Calendar / Scheduling	72	1.6 (1.1)	1.8 (1.2)a**
Accounting / Finance	72	1.2 (.7)	1.5 (1.1)a**
Computer Programming	71	1.8 (1.2)	2.3 (1.4)a**
Graphics	71	2.5 (1.5)	2.8 (1.6)a**
C. A. D. / C. A. M.	66	1.3 (.8)	1.6 (1.1)a**
Tutorials / C. A. I.	66	1.3 (.9)	1.8 (1.1)a**
Utilities	69	1.5 (1.0)	2.4 (1.5)a**
Integrated Packages	63	1.4 (1.1)	1.9 (1.4)a**
Other Applications	15	2.1 (1.6)	2.9 (1.9)

Application	N	Start Year 1	End Year 1
Computer Games	67	3.5 (1.5)	2.9 (1.5)b**
Word Processing	66	4.2 (1.1)	4.1 (1.1)b*
Data Base	67	3.0 (1.2)	2.6 (1.2)a**
Spreadsheet	67	2.6 (1.3)	3.3 (1.2)a**
Communications	67	3.0 (1.6)	2.3 (1.5)b**
Math / Statistics	67	2.6 (1.4)	2.1 (1.2)b*
Calendar / Scheduling	65	1.9 (1.2)	1.3 (.8)b**
Accounting / Finance	64	1.6 (1.2)	1.1 (.4)b**
Computer Programming	64	2.4 (1.4)	1.9 (1.2)b**
Graphics	64	2.8 (1.5)	2.6 (1.5)b*
C. A. D. / C. A. M.	60	1.7 (1.1)	1.3 (.9)b**
Tutorials / C. A. I.	61	1.8 (1.1)	1.4 (.8)b**
Utilities	64	2.4 (1.5)	2.3 (1.5)
Integrated Packages	58	1.9 (1.4)	1.8 (1.4)
Other Applications	9	2.7 (2.0)	2.3 (1.7)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

Maine East High School - Students
"How comfortable are you using each application?"

Application	N	Before PH		Start Year 1	
Computer Games	72	3.6	(1.5)	4.1	(1.2)a**
Word Processing	72	2.8	(1.6)	4.3	(.9)a**
Data Base	72	2.0	(1.3)	3.4	(1.3)a**
Spreadsheet	71	1.9	(1.2)	3.0	(1.4)a**
Communications	72	1.9	(1.4)	3.2	(1.6)a**
Math / Statistics	71	2.0	(1.4)	2.7	(1.4)a**
Calendar / Scheduling	71	1.7	(1.3)	2.0	(1.3)
Accounting / Finance	70	1.4	(1.0)	1.7	(1.2)
Computer Programming	70	2.0	(1.3)	2.4	(1.5)a**
Graphics	70	2.7	(1.5)	3.0	(1.6)a**
C. A. D. / C. A. M.	67	1.3	(.8)	1.7	(1.2)a**
Tutorials / C. A. I.	68	1.5	(1.0)	1.9	(1.3)a**
Utilities	69	1.8	(1.3)	2.6	(1.5)a**
Integrated Packages	63	1.5	(1.1)	1.9	(1.4)a**
Other Applications	16	2.1	(1.6)	2.9	(2.0)

Application	N	Start Year 1		End Year 1	
Computer Games	66	4.1	(1.2)	4.0	(1.3)
Word Processing	66	4.4	(.9)	4.3	(1.0)
Data Base	66	3.5	(1.3)	3.3	(1.5)
Spreadsheet	66	3.1	(1.4)	3.8	(1.3)a**
Communications	66	3.3	(1.6)	3.0	(1.7)
Math / Statistics	65	2.7	(1.4)	2.8	(1.5)
Calendar / Scheduling	63	2.1	(1.3)	2.1	(1.4)
Accounting / Finance	62	1.7	(1.3)	1.5	(1.1)
Computer Programming	63	2.5	(1.5)	2.1	(1.5)b**
Graphics	64	3.0	(1.6)	2.9	(1.6)
C. A. D. / C. A. M.	60	1.8	(1.2)	1.5	(1.1)
Tutorials / C. A. I.	61	2.0	(1.3)	1.8	(1.4)
Utilities	63	2.7	(1.5)	2.7	(1.6)
Integrated Packages	58	2.0	(1.4)	2.0	(1.6)
Other Applications	9	2.4	(1.9)	3.7	(2.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

Maine East High School - Students
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	9.7%(13.2%)	8.8% (6.7%)
"Employment" work at home	1.2% (2.6%)	2.1% (7.1%)
Watching Television	8.6% (8.4%)	10.8% (7.9%)a*
Listening to the Radio	5.0% (5.4%)	9.0% (7.7%)a**
Listening to records, tapes, or CD's	3.8% (5.2%)	5.5% (5.5%)a*
Talking with friends on the telephone	4.6% (5.0%)	5.9% (5.1%)a*
Visiting with friends in person	4.6% (6.2%)	3.0% (8.4%)a**
Reading pleasure books or magazines	2.2% (2.6%)	2.8% (3.6%)
Doing a hobby, art or craft	2.9% (3.8%)	3.4% (5.4%)
Partic. in club or group activity	2.7% (4.5%)	2.4% (3.2%)
Partic. in a sport or exercise	6.0% (7.6%)	8.4% (8.0%)a**
Relaxing (doing nothing at all)	5.3% (8.5%)	6.3% (9.8%)
Watching a movie, concert or play	2.8% (3.7%)	4.0% (4.2%)a**
Attending a sporting event	2.1% (3.5%)	2.1% (2.8%)
Activities using the computer at home		
"School" work using the computer	5.0% (5.9%)	4.9% (3.7%)
"Employment" work with the computer	.8% (2.1%)	.3% (1.0%)
Communicating with an Administrator	.1% (.6%)	.3% (1.1%)
Communicating with a Teacher	.7% (1.6%)	.9% (1.9%)
Communicating with a Parent	.6% (2.0%)	.7% (2.2%)
Communicating with a Student	2.1% (3.1%)	2.0% (2.7%)
Using the school's computer network	.6% (1.6%)	.9% (1.7%)
Working on Prodigy	5.4% (4.9%)	4.7% (3.4%)
Playing games or other entertainment	3.3% (4.0%)	3.9% (4.6%)
Use your computer for other purposes	.9% (2.8%)	2.3% (6.8%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=84 for all comparisons.

Maine East - Student Survey #1 - 73 Respondents (80.2%)

422: Improved/better grades/education	1	2	6				1		1
423: Learning in (computer) groups/classes/labs	3								
424: Project Homeroom is like regular school	6						1		
425: Make school work different (easier/harder)	1	2	2				2		1
426: Computers as teachers	2						1		
427: Individualized learning	1								
428: As an experiment							2		
430: Project Homeroom is a great opportunity	2	11	2				2		1
431: It is good for student in the future		2	3						1
440: Parent made student participate		11							
441: Student decided/convinced parents	1	2							
500: It is fun, interesting, good	3	18	1				14	1	10
510: Teachers in general							1		5
511: Field trips/projects							1		5
512: School work on computer	7						17		9
513: I like computers		2							
520: The same kids all day/benefits of group work							1		3
530: Increased communications with school	5	3	2				11		2
531: Increased communication with home/at school	1						2		
532: Improved communication skills							1		2
600: It is not fun, boring/did not like	6						3	5	3
610: Teachers in general								2	
612: I am not using the computer enough	2						1	1	
613: I do not like a specific subject								1	
620: The same kids all day/disadvantages of group work								7	
640: Too easy/did not learn much								1	
641: Too hard/too much work							2	4	
642: No help/too little help								2	
650: Difficulties in scheduling electives								2	
651: Want alternative subjects in Project Homeroom core								1	
660: Lack of organization by school							1	2	
664: An overall lack of organization (getting started)							1	15	
665: time/class length of Project Homeroom classes								1	

Maine East - Student Survey #1 - 73 Respondents (80.2%)

Student Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	8	6	17	53	58	14	7	5	2
20: Meaningless response	1								
100: Technology in general	1		1	1				2	
110: Computer/printer in general	2			2					
111: Computer	7			4					3
112: Printer				9					2
114: Mouse			1	2					
115: Keyboard				1					
121: Modem				1	2				
122: Telephone equipment/service		2			10				1
130: Information services in general/network in general								27	
131: Prodigy	1			6	4		5	2	13
200: No problem/nothing bad/no worst about PH					1	1		4	1
210: Problem report, current status unknown				8	4				
220: Problem is current				8	6			29	
230: Problem has been fixed (general)				3					
231: Problem fixed by corporation					4				
232: Problem fixed by school				1	1				
300: No one						8			
311: Teachers						32			
321: Corporation technical support						1			
330: Someone from home (in general)						5			
333: Another student						13			
334: My parent/another parent						6			
401: I "know" what Project Homeroom is	3								
402: I don't "know" what Project Homeroom is	12		1				3		
403: Project Homeroom is not what it was said to be	1								
404: I am curious about Project Homeroom		1							
405: No particular reason for participating			4						
410: Project Homeroom and learning about/using the computer	9	12	40				19		14
411: Having free computer, printer, equipment, etc.	8	19	1				19	1	12
420: Project Homeroom and increased access to teacher(s)			1				11		1
421: Improve student performance/motivation/learn	1	2	1				2		3

Maine East - Student Survey #2 - 84 Respondents (92.3%)

Student Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	42	5	8	17	3	7	7
20: Meaningless response		2	2	4	3	1	3
30: Discussion of contractual obligations							1
100: Technology in general	1				6		2
109: Software in general	5		2	11		1	
110: Computer/printer in general					1		
111: Computer	9	13	4		6		2
112: Printer	17		1				
113: Monitor	1						
114: Mouse	3						
115: Keyboard	7						
120: Telecommunications in general	2						
121: Modem	3						
122: Telephone equipment/service	1					4	
123: Telecommunications services		1					1
131: Prodigy	5		8	5	1	17	1
132: School Local Area Network (LAN)		7	3		13		30
200: No pmblem/nothing bad/no worst about PH		1	1				1
220: Problem is current	8			1			
230: Problem has been fixed (general)	9						
232: Problem fixed by school		1					
233: Problem fixed by home	1						
311: Teachers							2
312: School technical support staff	1	1					
403: Project Homeroom is not what it was said to be				1	3		1
410: Project Homeroom and learning about/using the computer		7		8		10	3
411: Having free computer, printer, equipment, etc.		8			1	22	
418: Improved/worsened peer interactions		1	6			5	
419: Integrating class subjects/interdisciplinary		1	1	6			
420: Project Homeroom and increased access to teacher(s)						1	1
421: Improve student performance/motivation/learn		1		1		1	
422: Improved/better grades/education		1					

Maine East - Student Survey #2 - 84 Respondents (92.3%)

423: Learning in (computer) groups/classes/labs			12	4			
424: Project Homeroom is like regular school					1		
425: Make school work different (easier/harder)				1			
428: As an experiment		1			1		
429: For the entire family		1					
430: Project Homeroom is a great opportunity		2					
431: It is good for student in the future		2		2			
440: Parent made student participate		1					
500: It is fun, interesting, good		17	8	3		3	
501: Don't know, unsure	3	1	1	4		1	1
510: Teachers in general		1				6	
511: Field trips/projects			21	5		5	
512: School work on computer		1				2	
513: I like computers		5					
515: I like a specific subject			26	18	1		
520: The same kids all day/benefits of group work		4	2			8	
531: Increased communication with home/at school			1				
600: It is not fun, boring/did not like		17	10	2	6	5	6
610: Teachers in general		2			4		1
611: Field trips/projects		1	11		8		5
612: I am not using the computer enough		1		1	1		1
613: I do not like a specific subject		3		6	7		
615: I do not like computers		1		1	1		1
620: The same kids all day/disadvantages of group work		6	1	1	8		3
621: Some kids do all the work			2				
633: Parent would like to be more involved					1		
640: Too easy/did not learn much		1	1		1		
641: Too hard/too much work		5	2	1	8		4
644: Grade lowered because of Project Homeroom		4			2		
650: Difficulties in scheduling electives				1			3
660: Lack of organization by school		1	1	1	3		9
661: Lack of support by corporations					1		1
662: It is not long enough					1		1
664: An overall lack of organization (getting started)		2			5	1	5

Maine East High School - Parents
"How much do you use each application?"

Application	N	Before PH		Start Year 1	
Computer Games	62	1.9	(1.2)	2.0	(1.4) a**
Word Processing	62	2.5	(1.7)	3.0	(1.5) a**
Data Base	53	1.9	(1.3)	2.1	(1.5)
Spreadsheet	55	1.8	(1.3)	1.9	(1.3) a*
Communications	55	1.7	(1.2)	2.1	(1.4) a**
Math / Statistics	55	1.6	(1.0)	1.6	(1.0)
Calendar / Scheduling	56	1.7	(1.2)	1.6	(1.2)
Accounting / Finance	56	1.5	(.9)	1.6	(1.0)
Computer Programming	57	1.6	(1.1)	1.5	(1.1)
Graphics	55	1.7	(1.2)	1.7	(1.1)
C. A. D. / C. A. M.	53	1.2	(.6)	1.3	(.7) a**
Tutorials / C. A. I.	54	1.3	(.7)	1.6	(.9) a**
Utilities	55	1.5	(1.1)	1.6	(1.2)
Integrated Packages	54	1.4	(.9)	1.5	(.9)
Other Applications	21	1.7	(.9)	1.7	(1.4)

Application	N	Start Year 1		End Year 1	
Computer Games	36	1.9	(1.2)	1.6	(1.0)
Word Processing	35	2.8	(1.4)	2.9	(1.4)
Data Base	29	2.0	(1.5)	1.8	(1.1)
Spreadsheet	30	1.9	(1.4)	1.9	(1.4)
Communications	30	2.2	(1.6)	1.9	(1.3)
Math / Statistics	28	1.6	(1.1)	1.5	(1.1)
Calendar / Scheduling	29	1.4	(.8)	1.5	(1.2)
Accounting / Finance	30	1.4	(1.0)	1.5	(1.0)
Computer Programming	29	1.4	(.9)	1.4	(.9)
Graphics	29	1.7	(1.2)	1.6	(1.1)
C. A. D. / C. A. M.	26	1.3	(.7)	1.2	(.5)
Tutorials / C. A. I.	26	1.7	(1.0)	1.4	(.9)
Utilities	28	1.6	(1.2)	1.7	(1.1)
Integrated Packages	25	1.5	(1.0)	1.4	(.9)
Other Applications	10	1.3	(.9)	1.3	(.7)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

Maine East High School - Parents
"How comfortable are you using each application?"

Application	N	Before PH		Start Year 1	
Computer Games	56	2.3	(1.5)	2.6	(1.6)a*
Word Processing	55	2.9	(1.6)	3.3	(1.5)a**
Data Base	46	2.3	(1.5)	2.4	(1.6)
Spreadsheet	48	2.1	(1.4)	2.3	(1.5)
Communications	47	1.8	(1.3)	2.2	(1.4)a**
Math / Statistics	48	1.7	(1.1)	2.0	(1.2)a*
Calendar / Scheduling	49	1.8	(1.4)	2.1	(1.5)
Accounting / Finance	48	1.8	(1.1)	1.9	(1.2)
Computer Programming	48	1.7	(1.2)	1.9	(1.4)
Graphics	48	1.9	(1.4)	1.9	(1.4)
C. A. D. / C. A. M.	47	1.3	(.8)	1.4	(.9)
Tutorials / C. A. I.	48	1.5	(1.1)	1.8	(1.2)
Utilities	48	1.7	(1.3)	1.9	(1.4)
Integrated Packages	47	1.6	(1.1)	1.7	(1.2)
Other Applications	18	1.3	(1.0)	1.6	(1.3)

Application	N	Start Year 1		End Year 1	
Computer Games	30	2.8	(1.6)	2.8	(1.5)
Word Processing	32	3.3	(1.4)	3.2	(1.6)
Data Base	26	2.3	(1.6)	2.3	(1.6)
Spreadsheet	27	2.4	(1.6)	2.3	(1.6)
Communications	27	2.3	(1.6)	2.4	(1.7)
Math / Statistics	23	2.0	(1.4)	[illegible]7	(1.4)
Calendar / Scheduling	25	2.0	(1.4)	2.2	(1.6)
Accounting / Finance	25	1.8	(1.3)	1.9	(1.3)
Computer Programming	23	1.7	(1.3)	1.6	(1.2)
Graphics	25	1.8	(1.5)	[illegible]9	(1.4)
C. A. D. / C. A. M.	22	1.5	(1.0)	1.3	(.9)
Tutorials / C. A. I.	23	1.8	(1.3)	1.8	(1.3)
Utilities	24	2.0	(1.6)	2.2	(1.6)
Integrated Packages	22	1.7	(1.4)	1.5	(1.1)
Other Applications	6	1.0	(.0)	1.3	(.5)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

Maine East High School - Parents
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	1.8% (3.8%)	3.8%(10.6%)
"Employment" work at home	5.4%(12.2%)	6.8%(13.7%)
Watching Television	15.9%(13.7%)	15.4%(11.7%)
Listening to the Radio	6.8%(10.0%)	9.4%(11.5%)
Listening to records, tapes, or CD's	2.2% (3.3%)	3.1% (3.6%)
Talking with friends on the telephone	4.5% (5.4%)	5.6% (5.7%)
Visiting with friends in person	3.7% (5.3%)	5.3% (5.2%)
Reading pleasure books or magazines	8.6%(10.0%)	8.4% (7.7%)
Doing a hobby, art or craft	3.6% (6.9%)	3.9% (5.7%)
Partic. in club or group activity	2.4% (3.8%)	2.9% (6.9%)
Partic. in a sport or exercise	3.3% (5.5%)	5.0% (8.8%)
Relaxing (doing nothing at all)	5.0% (7.5%)	8.2%(10.7%)
Watching a movie, concert or play	4.6% (6.1%)	5.6% (4.7%)
Attending a sporting event	1.0% (2.1%)	1.7% (4.5%)
Activities using the computer at home		
"School" work using the computer	.8% (2.5%)	1.0% (2.3%)
"Employment" work with the computer	3.5%(11.0%)	3.9% (9.3%)
Communicating with an Administrator	.2% (.6%)	.3% (1.8%)
Communicating with a Teacher	.5% (2.2%)	.5% (1.6%)
Communicating with a Parent	.4% (2.2%)	.3% (1.9%)
Communicating with a Student	2.0% (7.6%)	.7% (2.3%)
Using the school's computer network	.2% (.9%)	.2% (.8%)
Working on Prodigy	2.4% (5.3%)	2.9% (3.1%)
Playing games or other entertainment	1.6% (5.1%)	2.4% (7.7%)
Use your computer for other purposes	1.6% (4.7%)	2.9% (8.7%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=44 for all comparisons.

Maine East - Parent Survey #1 - 72 Respondents (79.1%)

Parent Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	13	10	18	50	57	33	19	13	8
20: Meaningless response		1							
100: Technology in general			1					2	
111: Computer	5			3					
112: Printer				5					
114: Mouse				1					
115: Keyboard				4					
116: Marketing i.e. of IBM	1								
121: Modem					3				
122: Telephone equipment/service				2	12				
123: Telecommunications services								2	
130: Information services in general/network in general			1	4			1	12	1
131: Prodigy				2	2			1	6
200: No problem/nothing bad/no worst about PH			1	4		6	1	15	1
210: Problem report, current status unknown				1	1			1	
220: Problem is current			2	3	8		2	16	1
230: Problem has been fixed (general)				10	3				
232: Problem fixed by school				1					
233: Problem fixed by home				1	1				
300: No one						4			
311: Teachers						14			
320: Corporations (in general)						2			
321: Corporation technical support						1			
331: Myself						10			
332: Someone else in my family						1			
334: My parent/another parent						3			
340: A combination of the school and corporation							3		1
401: I "know" what Project Homeroom is	5								
402: I don't "know" what Project Homeroom is	15							1	
403: Project Homeroom is not what it was said to be							1	4	
405: No particular reason for participating		1							

Maine East - Parent Survey #1 - 72 Respondents (79.1%)

410: Project Homeroom and learning about/using the computer	3	21	35				8	1	22
411: Having free computer, printer, equipment, etc.	2	3					6		6
420: Project Homeroom and increased access to teacher(s)	2	1					3		3
421: Improve student performance/motivation/learn	1	5	1				10		13
422: Improved/better grades/education	5	10	5				1		2
425: Make school work different (easier/harder)		2					1		
426: Computers as teachers	3						2		
428: As an experiment	3						2		
430: Project Homeroom is a great opportunity		10	1				1	2	3
431: It is good for student in the future	1	6	1				5		3
441: Student decided/convinced parents		5							
442: Project Homeroom is not for parents, is for students			5						
500: It is fun, interesting, good	4	5	1	1			10		8
510: Teachers in general									1
512: School work on computer	9	3					9		13
513: I like computers									2
520: The same kids all day/benefits of group work									1
530: Increased communications with school	7	1	8				17		5
531: Increased communication with home/at school	2	1							
600: It is not fun, boring/did not like							1	1	
612: I am not using the computer enough								7	
620: The same kids all day/disadvantages of group work							1	1	
622: It does not reflect my/student's personal effort								1	
630: Lack of communication with school			1	1				7	
640: Too easy/did not learn much								2	
641: Too hard/too much work							1		
642: No help/too little help								1	
650: Difficulties in scheduling electives								2	
651: Want alternative subjects in Project Homeroom core								1	
660: Lack of organization by school								1	
661: Lack of support by corporations							1	1	
664: An overall lack of organization (getting started)				2			1	9	

Maine East - Parent Survey #2 - 47 Respondents (51.7%)

Parent Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	26	14	18	19	9	9	11
20: Meaningless response		1	3	4	1	2	2
100: Technology in general	1		1			1	1
109: Software in general	3	3	1	1	1		1
111: Computer	2				2	2	
112: Printer	9				1		
115: Keyboard	2						
122: Telephone equipment/service	2						
123: Telecommunications services	1		1				
130: Information services in general/network in general				3	10	1	1
131: Prodigy	2	2	3	1	1	4	
132: School Local Area Network (LAN)			1		1		12
200: No problem/nothing bad/no worst about PH					8		
220: Problem is current	5						
230: Problem has been fixed (general)	6						
232: Problem fixed by school	1						
233: Problem fixed by home	2						
321: Corporation technical support							1
403: Project Homeroom is not what it was said to be		2	1	1	5		2
410: Project Homeroom and learning about/using the computer		2		1		10	2
411: Having free computer, printer, equipment, etc.		5				7	1
418: Improved/worsened peer interactions			5				
419: Integrating class subjects/interdisciplinary			2	7			
420: Project Homeroom and increased access to teacher(s)		2				2	
421: Improve student performance/motivation/learn		4	1	1		2	
422: Improved/better grades/education				1		1	
423: Learning in (computer) groups/classes/labs		1					
426: Computers as teachers		1				2	1
428: As an experiment		1			1		
429: For the entire family		2					
430: Project Homeroom is a great opportunity		3				1	

Maine East - Parent Survey #2 - 47 Respondents (51.7%)

431: It is good for student in the future		1				1	
443: I(we) don't use computer much		1			2		
500: It is fun, interesting, good		9	2	6		3	1
501: Don't know, unsure			6	5			2
510: Teachers in general						1	
511: Field trips/projects							1
512: School work on computer		2	1	1		1	
513: I like computers		2					
515: I like a specific subject				8		1	
520: The same kids all day/benefits of group work			6			1	
530: Increased communications with school		1				3	
531: Increased communication with home/at school			1				4
600: It is not fun, boring/did not like		2	1	2			
610: Teachers in general				1			
611: Field trips/projects					1		
613: I do not like a specific subject					1		1
620: The same kids all day/disadvantages of group work		1					
621: Some kids do all the work			2				
622: It does not reflect my/student's personal effort					1		
630: Lack of communication with school					2		
631: Lack of communication with home/at home					1		
633: Parent would like to be more involved					1	1	1
640: Too easy/did not learn much							1
641: Too hard/too much work					1		
644: Grade lowered because of Project Homeroom			1				
650: Difficulties in scheduling electives					1		
651: Want alternative subjects in Project Homeroom core		1			1		1
660: Lack of organization by school		1			2		4
661: Lack of support by corporations					1		
662: It is not long enough							2
664: An overall lack of organization (getting started)					2		
710: The Project is keeping kids home at night							1

Maine East - Grade Distribution Summary - English

	91F1			91F2			92S1			92S2		
	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
A	4.4%	5.1%	30.3%	4.4%	5.9%	29.6%	12.4%	2.0%	34.0%	7.9%	3.0%	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B	15.6%	21.5%	33.8%	23.3%	17.1%	33.7%	37.1%	24.9%	32.5%	44.9%	19.9%	32.3%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C	48.9%	42.1%	29.9%	43.3%	38.5%	24.0%	20.2%	28.4%	21.8%	28.1%	33.3%	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D	22.2%	18.5%	5.5%	22.2%	24.9%	9.7%	20.2%	28.4%	6.8%	11.2%	31.3%	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
F	8.9%	12.8%	0.5%	6.7%	13.7%	3.1%	10.1%	16.2%	4.9%	7.9%	12.4%	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92S1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHE = Project Homeroom English classes aggregate
NPHE = Comparable non-Project Homeroom English classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Maine East - Grade Distribution Summary - World Cultures

	91F1			91F2			92S1			92S2		
	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
A	12.2%	4.4%	30.3%	6.7%	3.4%	29.6%	23.0%	4.5%	34.0%	16.9%	8.0%	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B	41.1%	13.2%	33.8%	60.0%	20.7%	33.7%	57.5%	18.2%	32.5%	52.8%	20.7%	32.3%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C	35.6%	36.3%	29.9%	20.0%	27.6%	24.0%	14.9%	38.6%	21.8%	20.2%	28.7%	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D	7.8%	28.6%	5.5%	11.1%	37.9%	9.7%	3.4%	28.4%	6.8%	7.9%	28.7%	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
F	3.3%	17.6%	0.5%	2.2%	10.3%	3.1%	1.1%	10.2%	4.9%	2.2%	13.8%	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92S1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHH = Project Homeroom history classes aggregate
NPHH = Comparable non-Project Homeroom history classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

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Maine East - Grade Distribution Summary - Algebra

	91F1			91F2			92S1			92S2		
	PHA	NPHA	NPHO	PHA	NPHA	NPHO	PHA	NPHA	NPHO	PHA	NPHA	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
A	11.3%	12.6%	30.3%	12.7%	12.4%	29.6%	5.1%	12.8%	34.0%	10.1%	14.4%	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B	32.4%	21.4%	33.8%	26.8%	20.5%	33.7%	17.9%	28.2%	32.5%	17.7%	25.0%	32.3
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C	35.2%	25.2%	29.9%	47.9%	28.0%	24.0%	34.6%	34.9%	21.8%	38.0%	34.8%	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D	21.1%	15.7%	5.5%	9.9%	14.3%	9.7%	29.5%	16.1%	6.8%	19.0%	16.7%	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0 0%	0.0%	0.0%	0.0%	0.0%
F	0.0%	25.2%	0.5%	2.8%	24.8%	3.1%	12.8%	8.1%	4.9%	15.2%	9.1%	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92S1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHA = Project Homeroom Algebra classes aggregate
NPHA = Comparable non-Project Homeroom Algebra classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Maine East - Grade Distribution Summary - Biology

	91F1			91F2			92S1			92S2		
	PHB	NPHB	NPHO	PHB	NPHB	NPHO	PHB	NPHB	NPHO	PHB	NPHB	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
A	5.6%	5.8%	30.3%	5.6%	9.9%	29.6%	3.4%	13.1%	34.0%	3.4%	11.9%	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0.%	0.0%
B	17.8%	19.6%	33.8%	18.0%	16.3%	33.7%	6.8%	14.9%	32.5%	19.3%	17.0%	32.3%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C	31.1%	23.6%	29.9%	34.8%	28.6%	24.0%	48.9%	30.8%	21.8%	39.8%	31.7%	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D	31.1%	16.4%	5.5%	28.1%	19.0%	9.7%	20.5%	19.0%	6.8%	22.7%	22.0%	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
F	14.4%	34.7%	0.5%	13.5%	26.2%	3.1%	20.5%	22.2%	4.9%	14.8%	17.4%	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92S1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHB = Project Homeroom Biology classes aggregate
NPHB = Comparable non-Project Homeroom Biology classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Maine East - Grade Distribution Summary - Freshman Algebra II

	91F1			91F2			92S1			92S2		
	PHFA	NPHFA	NPHO	PHFA	NPHFA	NPHO	PHFA	NPHFA	NPHO	PHFA	NPHFA	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
A	14.3%	31.3%	30.3%	14.3%	29.0%	29.6%	14.3%	45.9%	34.0%	28.6%	39.1	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
B	42.9%	50.0%	33.8%	57.1%	41.9%	33.7%	14.3%	29.7%	32.5%	14.3%	30.4	32.3%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
C	28.6%	9.4%	29.9%	14.3%	25.8%	24.0%	14.3%	21.6%	21.8%	57.1%	30.4	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
D	14.3%	6.3%	5.5%	14.3%	0.0%	9.7%	42.9%	2.7%	6.8%	0.0%	0.0	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0%
F	0.0%	3.1%	0.5%	0.0%	3.2%	3.1%	14.3%	0.0%	4.9%	0.0%	0.0	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92S1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHFA = Project Homeroom Freshman Algebra II classes aggregate
NPHFA = Comparable non-Project Homeroom Freshman Algebra II classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Maine East - Grade Distribution Summary - Pre-Algebra

	91F1			91F2			92S1			92S2		
	PHPA	NPHPA	NPHO	PHPA	NPHPA	NPHO	PHPA	NPHPA	NPHO	PHPA	NPHPA	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
A	0.0%	14.0%	30.3%	0.0%	11.9%	29.8%		7.0%	34.0%		4.8%	31.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
B	0.0%	27.1%	33.8%	11.1%	19.8%	33.7%		22.2%	32.5%		16.5%	32.3%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
C+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
C	0.0%	22.9%	29.9%	77.8%	29.6%	24.0%		29.2%	21.8%		30.6%	20.9%
C-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
D+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
D	0.0%	19.2%	5.5%	0.0%	19.8%	9.7%		21.6%	6.8%		29.0%	10.9%
D-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
F	100%	16.8%	0.5%	11.1%	19.0%	3.1%		20.0%	4.9%		19.0%	4.5%

LEGEND:

91F1 = Fall 1991 first quarter grades
91F2 = Fall 1991 second quarter grades
92F1 = Spring 1992 first quarter grades
92S2 = Spring 1992 second quarter grades

PHPA = Project Homeroom Pre-Algebra classes aggregate
NPHPA = Comparable non-Project Homeroom Pre-Algebra classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

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New Trier High School - Students
"How much do you use each application?"

Application	N	Before PH	Start Year 1
Computer Games	72	2.5 (1.3)	2.7 (1.4)^{a**}
Word Processing	72	3.2 (1.2)	4.6 (.6)^{a**}
Data Base	68	1.4 (.7)	2.4 (1.4)^{a**}
Spreadsheet	71	1.6 (1.1)	4.2 (.9)^{a**}
Communications	71	1.5 (1.0)	3.9 (1.1)^{a**}
Math / Statistics	71	1.9 (1.2)	3.3 (1.3)^{a**}
Calendar / Scheduling	70	1.6 (1.1)	2.0 (1.4)^{a**}
Accounting / Finance	69	1.2 (.5)	1.4 (.9)^{a*}
Computer Programming	69	1.6 (.9)	1.9 (1.2)^{a**}
Graphics	71	2.0 (1.2)	3.6 (1.3)^{a**}
C. A. D. / C. A. M.	69	1.3 (.7)	1.7 (1.2)^{a**}
Tutorials / C. A. I.	67	1.3 (.5)	2.1 (1.3)^{a**}
Utilities	67	1.6 (1.0)	2.1 (1.4)^{a**}
Integrated Packages	65	1.5 (1.0)	2.4 (1.7)^{a**}
Other Applications	7	1.6 (1.5)	2.1 (2.0)

Application	N	Start Year 1	End Year 1
Computer Games	62	2.6 (1.4)	1.9 (1.0)^{b**}
Word Processing	63	4.7 (.5)	4.1 (1.0)^{b**}
Data Base	60	2.4 (1.4)	2.4 (1.2)^{b**}
Spreadsheet	63	4.3 (.9)	2.8 (1.2)^{b**}
Communications	63	4.0 (1.1)	3.0 (1.3)^{b**}
Math / Statistics	63	3.3 (1.3)	2.4 (1.0)^{b**}
Calendar / Scheduling	62	2.1 (1.4)	1.4 (.6)^{b**}
Accounting / Finance	62	1.4 (.9)	1.2 (.6)^{b**}
Computer Programming	61	2.0 (1.3)	1.4 (.9)^{b**}
Graphics	62	3.5 (1.4)	2.4 (1.2)^{b**}
C. A. D. / C. A. M.	55	1.7 (1.2)	1.2 (.6)^{b**}
Tutorials / C. A. I.	61	2.2 (1.4)	1.9 (1.2)
Utilities	61	2.1 (1.4)	2.1 (1.3)
Integrated Packages	57	2.4 (1.7)	2.1 (1.4)
Other Applications	2	1.0 (.0)	1.0 (.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

New Trier High School - Students
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	71	3.6 (1.4)	3.8 (1.3)[a**]
Word Processing	71	3.6 (1.4)	4.6 (.8)[a**]
Data Base	65	1.7 (1.0)	2.6 (1.5)[a**]
Spreadsheet	69	1.8 (1.3)	4.1 (1.2)[a**]
Communications	68	1.7 (1.1)	3.9 (1.3)[a**]
Math / Statistics	68	1.9 (1.2)	3.2 (1.5)[a**]
Calendar / Scheduling	67	1.7 (1.3)	2.3 (1.5)[a**]
Accounting / Finance	66	1.4 (1.0)	1.7 (1.3)[a*]
Computer Programming	67	1.7 (1.1)	2.2 (1.5)[a**]
Graphics	68	2.4 (1.4)	3.8 (1.4)[a**]
C. A. D. / C. A. M.	65	1.4 (1.0)	1.9 (1.4)[a**]
Tutorials / C. A. I.	63	1.5 (.9)	2.5 (1.6)[a**]
Utilities	64	1.8 (1.2)	2.2 (1.5)[a*]
Integrated Packages	62	1.7 (1.3)	2.6 (1.7)[a**]
Other Applications	8	1.5 (1.4)	2.8 (1.0)

Application	N	Start Year 1	End Year 1
Computer Games	58	3.8 (1.5)	3.9 (1.3)
Word Processing	62	4.6 (.8)	4.7 (.7)[a*]
Data Base	58	2.7 (1.5)	3.2 (1.4)[b**]
Spreadsheet	62	4.2 (1.0)	3.8 (1.2)
Communications	61	3.9 (1.3)	3.6 (1.3)
Math / Statistics	60	3.3 (1.5)	3.1 (1.3)
Calendar / Scheduling	57	2.4 (1.5)	2.3 (1.4)
Accounting / Finance	57	1.8 (1.3)	1.7 (1.2)[b*]
Computer Programming	64	2.3 (1.5)	1.8 (1.1)[b**]
Graphics	59	3.8 (1.4)	3.1 (1.5)
C. A. D. / C. A. M.	51	1.9 (1.5)	1.5 (1.1)
Tutorials / C. A. I.	56	2.5 (1.6)	2.6 (1.6)[a*]
Utilities	55	2.1 (1.4)	2.6 (1.4)
Integrated Packages	51	2.5 (1.7)	2.7 (1.6)
Other Applications	3	2.3 (2.3)	1.7 (1.2)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

New Trier High School - Students
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	11.1% (7.2%)	12.7% (7.8%)
"Employment" work at home	2.3% (3.1%)	2.6% (4.1%)
Watching Television	7.8% (8.4%)	7.5% (6.0%)
Listening to the Radio	5.3% (4.6%)	6.2% (7.1%)
Listening to records, tapes, or CD's	8.3% (7.4%)	8.7% (7.4%)
Talking with friends on the telephone	5.0% (3.3%)	6.6% (4.8%) a*
Visiting with friends in person	10.4% (11.2%)	12.1% (9.2%)
Reading pleasure books or magazines	2.9% (3.6%)	3.2% (3.6%)
Doing a hobby, art or craft	3.4% (4.4%)	3.7% (4.5%)
Partic. in club or group activity	2.5% (3.0%)	3.5% (4.3%)
Partic. in a sport or exercise	7.6% (7.7%)	8.2% (6.8%)
Relaxing (doing nothing at all)	4.2% (4.6%)	5.4% (6.9%)
Watching a movie, concert or play	3.5% (3.9%)	3.6% (2.8%)
Attending a sporting event	2.3% (2.5%)	2.2% (3.5%)
Activities using the computer at home		
"School" work using the computer	7.5% (6.0%)	4.8% (3.9%) b**
"Employment" work with the computer	1.2% (3.9%)	.2% (.7%)
Communicating with an Administrator	.5% (1.1%)	.4% (1.3%)
Communicating with a Teacher	1.3% (1.3%)	.1% (1.4%)
Communicating with a Parent	.6% (1.8%)	.4% (1.2%)
Communicating with a Student	1.9% (2.1%)	1.3% (1.7%) b*
Using the school's computer network	1.4% (1.7%)	1.5% (1.6%)
Working on Prodigy	3.3% (2.3%)	2.5% (2.1%) b**
Playing games or other entertainment	1.5% (1.4%)	1.4% (1.9%)
Use your computer for other purposes	1.3% (2.4%)	.6% (2.1%) b*

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=65 for all comparisons.

New Trier - Student Survey #1 - 73 Respondents (97.3%)

Student Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	3	2	13	44	64	5		3	
20: Meaningless response		1		1					
100: Technology in general								1	
110: Computer/printer in general				2					
111: Computer				3				3	7
112: Printer				19					
113: Monitor				1					
114: Mouse				2					
120: Telecommunications in general				2					
121: Modem			1		6			1	
122: Telephone equipment/service					3				
123: Telecommunications services				1					
130: Information services in general/network in general	1								
131: Prodigy				4	3		2	2	4
200: No problem/nothing bad/no worst about PH				1	1	1		3	
210: Problem report, current status unknown				6	2			2	
220: Problem is current				9	3			1	
230: Problem has been fixed (general)				8	4			2	
233: Problem fixed by home				2					
310: Schools in general	1								
311: Teachers						60			
312: School technical support staff						1			
321: Corporation technical support						1			
330: Someone from home (in general)						3			
333: Another student						2			
340: A combination of the school and corporation	1								
401: I "know" what Project Homeroom is	1								
402: I don't "know" what Project Homeroom is	8	2						1	1
403: Project Homeroom is not what it was said to be	. .				-		1	.	.
405: No particular reason for participating		1							
410: Project Homeroom and learning about/using the computer	16	15	46				12		15
411: Having free computer, printer, equipment, etc.	13	15	6				18		17

New Trier - Student Survey #1 - 73 Respondents (97.3%)

420: Project Homeroom and increased access to teacher(s)							5		
421: Improve student performance/motivation/learn	3	8	4						3
422: Improved/better grades/education			5						
423: Learning in (computer) groups/classes/labs	3								
424: Project Homeroom is like regular school							3	1	
425: Make school work different (easier/harder)		1					2		
426: Computers as teachers	1						7		
428: As an experiment	1								
430: Project Homeroom is a great opportunity		10					2		1
431: It is good for student in the future	1	4	5				1		2
440: Parent made student participate		6							
441: Student decided/convinced parents		4							
500: It is fun, interesting, good	8	24	1				19		18
510: Teachers in general							2		18
511: Field trips/projects							1		1
512: School work on computer	22						20		2
520: The same kids all day/benefits of group work	1						5		5
530: Increased communications with school	6						3		
532: Improved communication skills							7		1
600: It is not fun, boring/did not like							2	3	2
610: Teachers in general								5	
612: I am not using the computer enough	1						1	5	
620: The same kids all day/disadvantages of group work							4	10	
630: Lack of communication with school	1							1	
641: Too hard/too much work			1				13	31	
643: No extra grading/extra credit for Project extra work								2	
650: Difficulties in scheduling electives								1	
651: Want alternative subjects in Project Homeroom core								2	
660: Lack of organization by school							1	2	
661: Lack of support by corporations								1	
664: An overall lack of organization (getting started)							1	11	
665: time/class length of Project Homeroom classes								2	

New Trier - Student Survey #2 - 65 Respondents (86.7%)

Student Survey #2 Textual Responser Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	44	6	10	17	3	4	13
20: Meaningless response		5		1			2
100: Technology in general	1				2		
109: Software in general	3		4	4	1		
111: Computer	2	7	6		2	2	1
112: Printer	6						
114: Mouse	3						
115: Keyboard	1						
116: Marketing i.e. of IBM						1	1
121: Modem	3	1					1
122: Telephone equipment/service	1						
130: Information services in general/network in general	1						
131: Prodigy	3		2			4	
132: School Local Area Network (LAN)	1						
200: No problem/nothing bad/no worst about PH	3				4		3
220: Problem is current	1						
230: Problem has been fixed (general)	8						
232: Problem fixed by school	2						
233: Problem fixed by home	1						
311: Teachers							1
331: Myself	1						
410: Project Homeroom and learning about/using the computer		7	2	3		12	5
411: Having free computer, printer, equipment, etc.		2				10	
418: Improved/worsened peer interactions			8	1		3	
419: Integrating class subjects/interdisciplinary			5	12	2	1	
420: Project Homeroom and increased access to teacher(s)		1				6	
421: Improve student performance/motivation/learn		1	1	2		2	
423: Learning in (computer) groups/classes/labs		1	12	2	2	3	
424: Project Homeroom is like regular school							
425: Make school work different (easier/harder)		1				1	
428: As an experiment		2					
430: Project Homeroom is a great opportunity		1				1	

431: It is good for student in the future		1				1	
500: It is fun, interesting, good	1	12	15	4		3	1
501: Don't know, unsure	1	2	2	1			3
510: Teachers in general		11	1			18	
511: Field trips/projects			8	10		3	2
512: School work on computer		1				1	
515: I like a specific subject		2	10	5		2	
520: The same kids all day/benefits of group work		6	6	1		7	
531: Increased communication with home/at school			1				
532: Improved communication skills				1			
600: It is not fun, boring/did not like	1	6	5	2	1	2	
610: Teachers in general		1		1	3		2
611: Field trips/projects			2	6	5		1
612: I am not using the computer enough		3		1	1		10
613: I do not like a specific subject				3	5		2
614: I don't like IBM							1
615: I do not like computers		1			2		
620: The same kids all day/disadvantages of group work		9	1		9		2
621: Some kids do all the work			1				
630: Lack of communication with school				1	1		
632: Decreased communication/general lack of communication							1
640: Too easy/did not learn much		4		2			
641: Too hard/too much work		7	5	1	20		9
644: Grade lowered because of Project Homeroom		1	2	1	2		
650: Difficulties in scheduling electives		6			1		1
651: Want alternative subjects in Project Homeroom core							1
660: Lack of organization by school		1	1		2		9
661: Lack of support by corporations					1		
662: It is not long enough							1
664: An overall lack of organization (getting started)		1			3		4
700: New Trier's "leveling" system					2		
701: The Evaluator's surveys					5		2
710: The Project is keeping kids home at night		2					

New Trier High School - Parents
"How much do you use each application?"

Application	N	Before PH		Start Year 1	
Computer Games	55	1.5	(.7)	1.8	(1.0)** a
Word Processing	56	2.8	(1.5)	3.3	(1.5)** a
Data Base	51	2.0	(1.4)	2.3	(1.4)
Spreadsheet	49	2.3	(1.6)	2.4	(1.6)
Communications	50	1.8	(1.3)	2.3	(1.4)** a
Math / Statistics	49	1.6	(1.2)	1.7	(1.3)
Calendar / Scheduling	51	1.6	(1.2)	1.6	(1.2)
Accounting / Finance	50	2.1	(1.7)	2.0	(1.5)
Computer Programming	48	1.6	(1.3)	1.6	(1.2)
Graphics	49	1.6	(.9)	1.9	(1.3)
C. A. D. / C. A. M.	46	1.3	(.8)	1.3	(1.0)
Tutorials / C. A. I.	47	1.3	(.9)	1.5	(1.1)* a
Utilities	48	1.5	(1.1)	1.6	(1.3)
Integrated Packages	48	1.4	(.9)	1.5	(1.2)* a
Other Applications	14	1.3	(1.1)	1.6	(1.4)

Application	N	Start Year 1		End Year 1	
Computer Games	15	1.8	(.9)	1.2	(.6)* b
Word Processing	16	3.1	(1.5)	2.5	(1.3)
Data Base	15	1.9	(1.3)	1.3	(.5)
Spreadsheet	15	1.7	(1.2)	1.3	(.6)
Communications	16	2.3	(1.6)	1.7	(1.1)
Math / Statistics	15	1.3	(1.0)	1.3	(.9)
Calendar / Scheduling	15	1.6	(1.2)	1.3	(.9)
Accounting / Finance	15	1.5	(1.1)	1.6	(1.4)
Computer Programming	14	1.1	(.3)	1.0	(.0)
Graphics	13	1.6	(.9)	1.1	(.3)* b
C. A. D. / C. A. M.	12	1.1	(.3)	1.1	(.3)
Tutorials / C. A. I.	14	1.3	(.5)	1.5	(.9)
Utilities	14	1.5	(1.2)	1.4	(1.1)
Integrated Packages	14	1.1	(.4)	1.4	(1.1)
Other Applications	6	1.7	(1.6)	1.0	(.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

New Trier High School - Parents
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	50	2.5 (1.5)	2.8 (1.5)a*
Word Processing	51	3.0 (1.5)	3.6 (1.3)a**
Data Base	46	2.3 (1.6)	2.7 (1.5)a*
Spreadsheet	47	2.6 (1.8)	2.7 (1.6)
Communications	47	2.1 (1.5)	2.9 (1.5)a**
Math / Statistics	45	2.0 (1.4)	2.3 (1.5)a**
Calendar / Scheduling	46	2.0 (1.6)	2.3 (1.5)a*
Accounting / Finance	47	2.4 (1.7)	2.4 (1.6)
Computer Programming	45	1.8 (1.3)	2.0 (1.3)a*
Graphics	44	2.0 (1.3)	2.3 (1.3)a*
C. A. D. / C. A. M.	46	1.5 (1.1)	1.8 (1.2)
Tutorials / C. A. I.	44	1.5 (1.1)	1.9 (1.3)a**
Utilities	45	1.7 (1.3)	2.0 (1.4)a**
Integrated Packages	44	1.8 (1.3)	2.0 (1.3)a*
Other Applications	14	1.5 (1.2)	2.1 (1.5)

Application	N	Start Year 1	End Year 1
Computer Games	14	3.4 (1.5)	1.9 (1.2)b**
Word Processing	15	3.8 (1.2)	2.7 (1.5)b*
Data Base	14	2.4 (1.5)	1.6 (.9)
Spreadsheet	15	2.3 (1.6)	1.9 (1.1)
Communications	15	2.9 (1.6)	2.0 (1.4)
Math / Statistics	14	1.9 (1.5)	1.6 (1.2)
Calendar / Scheduling	15	1.9 (1.5)	1.5 (1.0)
Accounting / Finance	15	2.0 (1.5)	1.5 (.9)
Computer Programming	14	1.4 (1.1)	1.0 (.0)
Graphics	14	2.4 (1.4)	1.2 (.6)b**
C. A. D. / C. A. M.	13	1.6 (1.2)	1.1 (.3)
Tutorials / C. A. I.	14	1.7 (1.2)	1.4 (.7)
Utilities	14	1.7 (1.3)	1.4 (1.1)
Integrated Packages	13	1.5 (1.1)	1.5 (1.1)
Other Applications	4	1.3 (.5)	1.0 (.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

New Trier High School - Parents
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	2.6% (4.2%)	4.6% (7.4%)
"Employment" work at home	12.1%(17.2%)	12.6%(18.4%)
Watching Television	12.3%(11.9%)	15.0% (9.9%)
Listening to the Radio	5.1% (5.9%)	11.2%(11.6%)
Listening to records, tapes, or CD's	1.6% (2.3%)	3.7% (5.2%)
Talking with friends on the telephone	3.8% (3.5%)	4.5% (4.9%)
Visiting with friends in person	5.9% (5.6%)	5.3% (4.3%) b*
Reading pleasure books or magazines	10.8% (8.9%)	7.9% (6.6%) a**
Doing a hobby, art or craft	1.6% (2.4%)	4.4% (4.2%) a*
Partic. in club or group activity	2.3% (4.0%)	3.3% (4.1%)
Partic. in a sport or exercise	5.3% (6.8%)	6.7% (7.7%)
Relaxing (doing nothing at all)	3.2% (4.5%)	5.7% (6.1%) a*
Watching a movie, concert or play	4.4% (3.6%)	3.7% (2.5%)
Attending a sporting event	4.6% (5.3%)	5.0% (6.8%)
Activities using the computer at home		
"School" work using the computer	1.2% (1.9%)	1.0% (1.3%)
"Employment" work with the computer	4.2% (8.4%)	1.0% (2.4%)
Communicating with an Administrator	.1% (.6%)	2.2% (8.3%)
Communicating with a Teacher	.1% (.6%)	.1% (.5%)
Communicating with a Parent	.1% (.6%)	.0% (.0%)
Communicating with a Student	.1% (.6%)	.0% (.0%)
Using the school's computer network	.2% (.5%)	.3% (1.1%)
Working on Prodigy	.8% (1.4%)	1.2% (2.3%)
Playing games or other entertainment	.4% (1.3%)	.1% (.2%)
Use your computer for other purposes	1.5% (3.8%)	.5% (1.7%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=19 for all comparisons.

New Trier - Parent Survey #1 - 65 Respondents (86.7%)

Parent Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	46	44	51	60	62	50	47	45	45
20: Meaningless response			1				1		
100: Technology in general	1								
111: Computer				1				1	1
112: Printer				3					
114: Mouse				1					
121: Modem					1				
122: Telephone equipment/service					1				
130: Information services in general/network in general								1	
131: Prodigy					2			1	
200: No problem/nothing bad/no worst about PH						4		3	
210: Problem report, current status unknown				1	1				
220: Problem is current				1	1			3	
230: Problem has been fixed (general)				1	1				
232: Problem fixed by school				1					
300: No one						1			
310: Schools in general				1					
320: Corporations (in general)									
321: Corporation technical support						1			
331: Myself						3			
333: Another student						1			
334: My parent/another parent						1			
340: A combination of the school and corporation							2		
401: I "know" what Project Homeroom is	4								1
402: I don't "know" what Project Homeroom is	1								
410: Project Homeroom and learning about/using the computer	6	6	11				4		11
411: Having free computer, printer, equipment, etc.							1		
420: Project Homeroom and increased access to teacher(s)		1							
421: Improve student performance/motivation/learn	1	4	1				4	1	6

New Trier - Parent Survey #1 - 65 Respondents (86.7%)

422: Improved/better grades/education	1	2	2				1		4
423: Learning in (computer) groups/classes/labs		1					1		
428: As an experiment	1							1	
430: Project Homeroom is a great opportunity		6							
431: It is good for student in the future		1					1		
441: Student decided/convinced parents		1							
500: It is fun, interesting, good		2					3	1	
510: Teachers in general									1
512: School work on computer	5	1					1		5
530: Increased communications with school	4	1					6		
531: Increased communication with home/at school	1	1							1
532: Improved communication skills							1		
610: Teachers in general								1	
612: I am not using the computer enough								3	
614: I don't like IBM								1	
620: The same kids all day/disadvantages of group work								2	
622: It does not reflect my/student's personal effort								1	
630: Lack of communication with school								2	
640: Too easy/did not learn much								1	
641: Too hard/too much work									1
650: Difficulties in scheduling electives								1	
651: Want alternative subjects in Project Homeroom core								1	
662: It is not long enough			1					1	
664: An overall lack of organization (getting started)			1	1				4	

New Trier - Parent Survey #2 - 20 Respondents (26.7%)

Parent Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	16	6	6	10	4	5	9
20: Meaningless response	1		1				
100: Technology in general					1		1
109: Software in general					1		
111: Computer	2				3		
112: Printer	1						
121: Modem					1		
132: School Local Area Network (LAN)					1		2
200: No problem/nothing bad/no worst about PH					4		
230: Problem has been fixed (general)	1						
232: Problem fixed by school	1						
410: Project Homeroom and learning about/using the computer		1				6	1
411: Having free computer, printer, equipment, etc.						2	
418: Improved/worsened peer interactions			2		1	2	
419: Integrating class subjects/interdisciplinary				6		1	
420: Project Homeroom and increased access to teacher(s)						1	
421: Improve student performance/motivation/learn		2	1	1		2	
422: Improved/better grades/education		1					
423: Learning in (computer) groups/classes/labs		2					
425: Make school work different (easier/harder)						1	
426: Computers as teachers		1					
430: Project Homeroom is a great opportunity		1				2	
431: It is good for student in the future		1					
442: Project Homeroom is not for parents, is for students			1				
500: It is fun, interesting, good		3	4	6			2
510: Teachers in general		2				4	
512: School work on computer			1	1			
515: I like a specific subject						1	
520: The same kids all day/benefits of group work			8				2
532: Improved communication skills		1					

New Trier - Parent Survey #2 - 20 Respondents (26.7%)

600: It is not fun, boring/did not like		1					
612: I am not using the computer enough					1		1
620: The same kids all day/disadvantages of group work					1		
621: Some kids do all the work			2				
622: It does not reflect my/student's personal effort		1					
632: Decreased communication/general lack of communication			1				
633: Parent would like to be more involved					1		1
642: No help/too little help		1					
660: Lack of organization by school					2		1
661: Lack of support by corporations							1
664: An overall lack of organization (getting started)					2		2
665: time/class length of Project Homeroom classes					1		
700: New Trier's "leveling" system					2		1

New Trier - Grade Distribution Summary - English

	91FM			91FS			92SM			92SS		
	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO
A+	0.0%		0.4%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
A	0.0%		19.7%	6.1%	15.8%	22.5%	0.0%		23.6%	8.5%	19.9%	28.2%
A-	2.0%		2.2%	0.0%	0.0%	0.0%	2.8%		7.7%	0.0%	0.0%	0.0%
B+	16.3%		10.8%	0.0%	0.0%	0.0%	12.7%		6.2%	0.0%	0.0%	0.0%
B	16.3%		33.6%	51.0%	49.4%	50.7%	21.1%		24.6%	45.1%	42.9%	44.2%
B-	20.4%		9.0%	0.0%	0.0%	0.0%	22.5%		8.7%	0.0%	0.0%	0.0%
C+	22.4%		4.0%	0.0%	0.0%	0.0%	11.3%		3.6%	0.0%	0.0%	0.0%
C	16.3%		11.2%	36.7%	27.8%	19.4%	14.1%		13.8%	42.3%	29.9%	18.9%
C-	4.1%		4.9%	0.0%	0.0%	0.0%	9.9%		3.1%	0.0%	0.0%	0.0%
D+	0.0%		0.0%	0.0%	0.0%	0.0%	1.4%		2.1%	0.0%	0.0%	0.0%
D	2.0%		2.7%	6.1%	9.7%	6.2%	0.0%		2.6%	4.2%	5.2%	6.8%
D-	0.0%		0.9%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
F	0.0%		0.4%	0.0%	3.1%	1.3%	4.2%		1.0%	0.0%	2.2%	1.9%

LEGEND:

91FM = Fall 1991 mid-semester grades
91FS = Fall 1991 end-semester grades
92SM = Spring 1992 mid-semester grades
92SS = Spring 1992 end-semester grades

PHE = Project Homeroom English classes aggregate
NPHE = Comparable non-Project Homeroom English classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

New Trier - Grade Distribution Summary - Biology

	91FM			91FS			92SM			92SS		
	PHB	NPHB	NPHO	PHB	NPHB	NPHO	PHB	NPHB	NPHO	PHB	NPHB	NPHO
A+	0.0%		0.4%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
A	15.5%		19.7%	22.2%	14.4%	22.5%	21.4%		23.6%	22.2%	17.3%	28.2%
A-	2.8%		2.2%	0.0%	0.0%	0.0%	0.0%		7.7%	0.0%	0.0%	0.0%
B+	1.4%		10.8%	0.0%	0.0%	0.0%	1.4%		6.2%	0.0%	0.0%	0.0%
B	35.2%		33.6%	33.3%	39.1%	50.7%	25.7%		24.6%	38.9%	37.1%	44.2%
B-	8.5%		9.0%	0.0%	0.0%	0.0%	2.9%		8.7%	0.0%	0.0%	0.0%
C+	2.8%		4.0%	0.0%	0.0%	0.0%	0.0%		3.6%	0.0%	0.0%	0.0%
C	22.5%		11.2%	0.0%	34.7%	19.4%	34.3%		13.8%	31.9%	32.2%	18.9%
C-	5.6%		4.9%	33.3%	0.0%	0.0%	1.4%		3.1%	0.0%	0.0%	0.0%
D+	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		2.1%	0.0%	0.0%	0.0%
D	5.6%		2.7%	11.1%	5.4%	6.2%	11.4%		2.6%	6.9%	9.4%	6.8%
D-	0.0%		0.9%	0.0%	0.0%	0.0%	1.5%		1.5%	0.0%	0.0%	0.0%
F	0.0%		0.4%	0.0%	6.4%	1.3%	1.0%		1.0%	0.0%	4.0%	1.9%

LEGEND:

91FM = Fall 1991 mid-semester grades
91FS = Fall 1991 end-semester grades
92SM = Spring 1992 mid-semester grades
92SS = Spring 1992 end-semester grades

PHB = Project Homeroom Biology classes aggregate
NPHB = Comparable non-Project Homeroom Biology classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

New Trier - Grade Distribution Summary - Geometry

	91FM			91FS			92SM			92SS		
	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO
A+	2.8%		0.4%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
A	15.5%		19.7%	24.2%	17.5%	22.5%	11.6%		23.6%	17.6%	15.9%	28.2%
A-	8.5%		2.2%	0.0%	0.0%	0.0%	4.3%		7.7%	0.0%	0.0%	0.0%
B+	2.8%		10.8%	0.0%	0.0%	0.0%	4.3%		6.2%	0.0%	0.0%	0.0%
B	19.7%		33.6%	28.4%	39.0%	50.7%	17.4%		24.6%	27.9%	34.7%	44.2%
B-	7.0%		9.0%	0.0%	0.0%	0.0%	4.3%		8.7%	0.0%	0.0%	0.0%
C+	1.4%		4.0%	0.0%	0.0%	0.0%	2.9%		3.6%	0.0%	0.0%	0.0%
C	11.3%		11.2%	20.3%	30.7%	19.4%	18.8%		13.8%	33.8%	31.6%	18.9%
C-	5.6%		4.9%	0.0%	0.0%	0.0%	10.1%		3.1%	0.0%	0.0%	0.0%
D+	2.8%		0.0%	0.0%	0.0%	0.0%	5.8%		2.1%	0.0%	0.0%	0.0%
D	11.3%		2.7%	21.6%	9.7%	6.2%	15.9%		2.6%	17.6%	13.8%	6.8%
D-	1.4%		0.4%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
F	9.9%		0.9%	5.4%	3.1%	1.3%	4.3%		1.0%	2.9%	3.9%	1.9%

LEGEND:

91FM = Fall 1991 mid-semester grades
91FS = Fall 1991 end-semester grades
92SM = Spring 1992 mid-semester grades
92SS = Spring 1992 end-semester grades

PHG = Project Homeroom Geometry classes aggregate
NPHG = Comparable non-Project Homeroom Geometry classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

New Trier - Grade Distribution Summary - Geography

	91FM			91FS			92SM			92SS		
	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO
A+	0.0%		0.4%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
A	0.0%		19.7%	20.3%	23.2%	22.5%	2.8%		23.6%	29.6%	19.5%	28.2%
A-	13.5%		2.2%	0.0%	0.0%	0.0%	20.8%		7.7%	0.0%	0.0%	0.0%
B+	14.9%		10.8%	0.0%	0.0%	0.0%	11.1%		6.2%	0.0%	0.0%	0.0%
B	21.6%		33.6%	60.8%	47.9%	50.7%	9.7%		24.6%	36.6%	38.6%	44.2%
B-	24.3%		9.0%	0.0%	0.0%	0.0%	22.2%		8.7%	0.0%	0.0%	0.0%
C+	17.6%		4.0%	0.0%	0.0%	0.0%	11.1%		3.6%	0.0%	0.0%	0.0%
C	2.7%		11.2%	18.9%	20.5%	19.4%	8.3%		13.8%	29.6%	29.3%	18.9%
C-	2.7%		4.9%	0.0%	0.0%	0.0%	12.5%		3.1%	0.0%	0.0%	0.0%
D+	1.4%		0.0%	0.0%	0.0%	0.0%	1.4%		2.1%	0.0%	0.0%	0.0%
D	0.0%		2.7%	0.0%	5.4%	6.2%	0.0%		2.6%	4.2%	9.3%	6.8%
D-	0.0%		0.9%	0.0%	0.0%	0.0%	0.0%		1.5%	0.0%	0.0%	0.0%
F	1.4%		0.4%	0.0%	3.1%	1.3%	0.0%		1.0%	0.0%	3.3%	1.9%

LEGEND:

91FM = Fall 1991 mid-semester grades
91FS = Fall 1991 end-semester grades
92SM = Spring 1992 mid-semester grades
92SS = Spring 1992 end-semester grades

PHG = Project Homeroom Geography classes aggregate
NPHG = Comparable non-Project Homeroom Geography classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

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Amos Alonzo Stagg High School - Students
"How much do you use each application?"

Application	N	Before PH	Start Year 1
Computer Games	75	2.7 (1.3)	3.7 (1.2)a**
Word Processing	75	2.4 (1.5)	4.0 (1.0)a**
Data Base	71	1.5 (1.0)	2.3 (1.3)a**
Spreadsheet	72	1.7 (1.2)	2.5 (1.4)a**
Communications	73	1.9 (1.4)	4.0 (1.2)a**
Math / Statistics	71	1.7 (1.1)	2.3 (1.4)a**
Calendar / Scheduling	72	1.7 (1.1)	2.1 (1.3)a**
Accounting / Finance	68	1.2 (.7)	1.5 (.9)a**
Computer Programming	69	1.6 (1.0)	2.1 (1.2)a**
Graphics	72	2.3 (1.5)	3.2 (1.5)a**
C. A. D. / C. A. M.	67	1.4 (1.1)	1.8 (1.2)a*
Tutorials / C. A. I.	70	1.9 (1.2)	2.4 (1.4)a**
Utilities	70	1.9 (1.2)	2.8 (1.5)a**
Integrated Packages	69	1.8 (1.4)	3.1 (1.7)a**
Other Applications	4	2.0 (2.0)	1.0 (.0)

Application	N	Start Year 1	End Year 1
Computer Games	73	3.7 (1.2)	2.6 (1.2)b**
Word Processing	73	4.0 (1.0)	4.0 (1.0)
Data Base	69	2.3 (1.3)	2.3 (1.1)
Spreadsheet	69	2.5 (1.4)	2.2 (1.3)
Communications	73	3.9 (1.2)	3.6 (1.4)
Math / Statistics	71	2.3 (1.4)	2.1 (1.3)
Calendar / Scheduling	70	2.1 (1.3)	1.9 (1.1)
Accounting / Finance	67	1.5 (.9)	1.3 (.8)
Computer Programming	70	2.1 (1.2)	1.9 (1.2)b**
Graphics	70	3.2 (1.5)	2.6 (1.3)b*
C. A. D. / C. A. M.	68	1.9 (1.2)	1.5 (.9)b**
Tutorials / C. A. I.	70	2.4 (1.3)	1.7 (.9)b**
Utilities	70	2.8 (1.5)	2.6 (1.4)b**
Integrated Packages	68	3.1 (1.7)	1.9 (1.2)
Other Applications	2	2.0 (1.4)	3.0 (2.8)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

Amos Alonzo Stagg High School - Students
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	72	3.8 (1.5)	4.2 (1.2)**
Word Processing	71	2.7 (1.6)	4.3 (1.1)**
Data Base	65	1.8 (1.2)	2.4 (1.5)**
Spreadsheet	68	2.0 (1.4)	2.8 (1.6)**
Communications	69	2.0 (1.4)	4.0 (1.3)**
Math / Statistics	65	2.0 (1.4)	2.4 (1.5)**
Calendar / Scheduling	67	1.8 (1.3)	2.4 (1.6)**
Accounting / Finance	63	1.4 (1.0)	1.8 (1.2)**
Computer Programming	65	1.7 (1.1)	2.2 (1.4)**
Graphics	69	2.5 (1.5)	3.3 (1.6)**
C. A. D. / C. A. M.	66	1.5 (1.1)	2.0 (1.4)**
Tutorials / C. A. I.	67	1.9 (1.2)	2.7 (1.6)**
Utilities	65	2.0 (1.3)	2.8 (1.6)**
Integrated Packages	66	2.1 (1.5)	3.2 (1.7)**
Other Applications	6	2.0 (1.7)	1.5 (1.2)

Application	N	Start Year 1	End Year 1
Computer Games	71	4.2 (1.2)	4.2 (1.2)
Word Processing	71	4.3 (1.1)	4.4 (1.0)
Data Base	65	2.4 (1.4)	2.9 (1.3)*
Spreadsheet	67	2.7 (1.6)	2.8 (1.5)
Communications	70	4.0 (1.3)	3.8 (1.4)
Math / Statistics	66	2.3 (1.5)	2.6 (1.4)
Calendar / Scheduling	66	2.4 (1.6)	2.4 (1.4)
Accounting / Finance	63	1.7 (1.1)	1.8 (1.1)
Computer Programming	66	2.1 (1.3)	2.1 (1.4)
Graphics	68	3.3 (1.6)	2.9 (1.4)b*
C. A. D. / C. A. M.	67	1.9 (1.4)	1.6 (1.1)
Tutorials / C. A. I.	69	2.7 (1.6)	2.2 (1.4)b*
Utilities	67	2.8 (1.6)	2.8 (1.4)
Integrated Packages	64	3.1 (1.7)	2.2 (1.4)b**
Other Applications	3	1.7 (1.2)	3.7 (2.3)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

Amos Alonzo Stagg High School - Students
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	7.3% (5.1%)	7.6% (5.6%)
"Employment" work at home	1.5% (3.7%)	1.5% (2.8%)
Watching Television	8.3% (6.6%)	8.2% (7.4%)
Listening to the Radio	7.1% (5.8%)	9.3% (7.2%) a*
Listening to records, tapes, or CD's	5.2% (3.8%)	7.1% (5.9%) a**
Talking with friends on the telephone	8.2% (5.9%)	7.9% (5.5%)
Visiting with friends in person	8.7% (6.5%)	9.9% (10.5%) b*
Reading pleasure books or magazines	3.3% (3.1%)	2.2% (2.3%)
Doing a hobby, art or craft	3.0% (3.7%)	2.8% (3.6%)
Partic. in club or group activity	2.2% (3.9%)	2.4% (3.5%)
Partic. in a sport or exercise	6.4% (6.3%)	6.2% (5.1%)
Relaxing (doing nothing at all)	5.5% (6.2%)	5.6% (8.8%)
Watching a movie, concert or play	3.1% (2.7%)	3.1% (2.2%)
Attending a sporting event	2.6% (3.3%)	2.2% (3.2%)
Activities using the computer at home		
"School" work using the computer	5.0% (4.5%)	4.7% (3.6%)
"Employment" work with the computer	.4% (1.7%)	.8% (2.7%)
Communicating with an Administrator	.4% (1.3%)	.6% (1.2%)
Communicating with a Teacher	1.3% (1.6%)	1.3% (1.3%)
Communicating with a Parent	1.3% (3.0%)	2.7% (7.0%) b*
Communicating with a Student	4.5% (3.4%)	3.5% (3.4%)
Using the school's computer network	1.9% (2.7%)	3.1% (5.2%) b**
Working on Prodigy	7.8% (5.2%)	4.3% (3.8%) b**
Playing games or other entertainment	4.0% (3.8%)	2.0% (2.5%)
Use your computer for other purposes	.9% (2.3%)	1.2% (2.7%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=74 for all comparisons.

Amos Alonzo Stagg - Student Survey #1 - 76 Respondents (100.0%)

Student Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	7	8	22	55	56	3	3	4	1
20: Meaningless response	2				1		2	1	
100: Technology in general							1	4	
110: Computer/printer in general				2					
111: Computer				2				1	14
112: Printer				9					
120: Telecommunications in general				4					
121: Modem					1				1
122: Telephone equipment/service				1	13				7
123: Telecommunications services				1	1				
131: Prodigy			1	6	2		5	1	12
140: Electrical Failure					4				
200: No problem/nothing bad/no worst about PH						1		11	
210: Problem report, current status unknown					2			4	
220: Problem is current				7	5				
230: Problem has been fixed (general)				6	8				
231: Problem fixed by corporation				1					
232: Problem fixed by school					1				
233: Problem fixed by home				1	2				
300: No one						1			
311: Teachers					1	35			
330: Someone from home (in general)						11			
331: Myself						5			
333: Another student					1	31			
334: My parent/another parent						2			
401: I "know" what Project Homeroom is	4	1					1		
402: I don't "know" what Project Homeroom is	4		1				1	2	
403: Project Homeroom is not what it was said to be								1	
404: I am curious about Project Homeroom		1							
410: Project Homeroom and learning about/using the computer	14	18	40				11	1	6

Amos Alonzo Stagg - Student Survey #1 - 76 Respondents (100.0%)

411: Having free computer, printer, equipment, etc.	10	6					25		5
420: Project Homeroom and increased access to teacher(s)							5		
421: Improve student performance/motivation/learn		2	9				2		5
422: Improved/better grades/education		2	5				1		4
423: Learning in (computer) groups/classes/labs	6		4				9	1	
424: Project Homeroom is like regular school	1						1		
425: Make school work different (easier/harder)	3						1		
426: Computers as teachers	6						15		
427: Individualized learning		1					2		
428: As an experiment							2		
429: For the entire family		1							
430: Project Homeroom is a great opportunity	2	11	1				2		2
431: It is good for student in the future		11	9						
432: The student had no choice about participating		2							
440: Parent made student participate		13							
441: Student decided/convinced parents		4							
500: It is fun, interesting, good	8	14					15	2	21
510: Teachers in general							3		15
511: Field trips/projects	2						4		9
512: School work on computer	11	1					11		4
514: I am making a good personal effort									1
515: I like a specific subject									4
520: The same kids all day/benefits of group work							2	1	6
530: Increased communications with school	4	1	2				6		2
531: Increased communication with home/at school			1				3		
532: Improved communication skills			1				8	1	1
600: It is not fun, boring/did not like	2							3	1
611: Field trips/projects								6	
612: I am not using the computer enough	4						1	6	
613: I do not like a specific subject								11	
621: Some kids do all the work								1	

622: It does not reflect my/student's personal effort								1	
630: Lack of communication with school								1	
632: Decreased communication/general lack of communication								1	
640: Too easy/did not learn much								1	
641: Too hard/too much work	1						2	17	
642: No help/too little help								2	
651: Want alternative subjects in Project Homeroom core								1	
660: Lack of organization by school								2	
663: It's a gimmick	2								
664: An overall lack of organization (getting started)								4	
665: time/class length of Project Homeroom classes								1	1

Amos Alonzo Stagg - Student Survey #2 - 74 Respondents (97.4%)

Student Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	30	8	13	13	7	9	13
20: Meaningless response	3	2	3	3		1	4
30: Discussion of contractual obligations		1					
100: Technology in general	5					1	
109: Software in general				1			
111: Computer	4	4				1	
112: Printer	10						
114: Mouse	2						
115: Keyboard	1						
120: Telecommunications in general	1						
121: Modem	1						
122: Telephone equipment/service	7					2	
123: Telecommunications services							2
131: Prodigy	7		1			2	
132: School Local Area Network (LAN)	8						
200: No problem/nothing bad/no worst about PH			2		1		2
220: Problem is current	5						
230: Problem has been fixed (general)	15						
232: Problem fixed by school	1						
233: Problem fixed by home	1						
311: Teachers							4
312: School technical support staff	1						
331: Myself	1						
403: Project Homeroom is not what it was said to be					1		
410: Project Homeroom and learning about/using the computer		7		1		10	4
411: Having free computer, printer, equipment, etc.						6	
418: Improved/worsened peer interactions		2	5	1		11	1
419: Integrating class subjects/interdisciplinary			3	21		1	3
420: Project Homeroom and increased access to teacher(s)						3	1
421: Improve student performance/motivation/learn		1		4			
422: Improved/better grades/education		3	2			2	
423: Learning in (computer) groups/classes/labs			17	2	2	3	

Amos Alonzo Stagg - Student Survey #2 - 74 Respondents (97.4%)

424: Project Homeroom is like regular school		1					
425: Make school work different (easier/harder)		4		1			
428: As an experiment		2					
430: Project Homeroom is a great opportunity		3	1			1	
431: It is good for student in the future		11				1	
500: It is fun, interesting, good		20	4	3		2	
501: Don't know, unsure	1				1		2
510: Teachers in general		4	4	2		6	
511: Field trips/projects		2	8	3		19	10
513: I like computers		2					
515: I like a specific subject			19	22		3	2
520: The same kids all day/benefits of group work		7	3	1		11	2
530: Increased communications with school		2					
531: Increased communication with home/at school			1				
532: Improved communication skills			1			1	
600: It is not fun, boring/did not like		9	4	1	2	1	
610: Teachers in general		1	1	1	14		2
611: Field trips/projects				3	16		3
612: I am not using the computer enough					2		4
613: I do not like a specific subject		1		11	7		3
620: The same kids all day/disadvantages of group work		2	5		5	1	3
621: Some kids do all the work			18				1
622: It does not reflect my/student's personal effort					1		
630: Lack of communication with school			1		1		
631: Lack of communication with home/at home							1
632: Decreased communication/general lack of communication					1		1
640: Too easy/did not learn much		2		1			
641: Too hard/too much work		12		4	23		15
644: Grade lowered because of Project Homeroom			2				
650: Difficulties in scheduling electives		6			2		2
651: Want alternative subjects in Project Homeroom core				1			1
660: Lack of organization by school					2		8
661: Lack of support by corporations							1
662: It is not long enough		1					
665: time/class length of Project Homeroom classes					3	2	

Amos Alonzo Stagg High School - Parents
"How much do you use each application?"

Application	N	Before PH	Start Year 1
Computer Games	49	1.9 (1.0)	2.1 (1.0) a**
Word Processing	49	2.4 (1.4)	2.9 (1.2) a**
Data Base	44	2.4 (1.5)	2.4 (1.4)
Spreadsheet	43	1.9 (1.3)	2.4 (1.4) a**
Communications	45	2.1 (1.3)	2.8 (1.4) a**
Math / Statistics	44	1.9 (1.2)	2.0 (1.2)
Calendar / Scheduling	44	1.9 (1.2)	2.1 (1.1) a*
Accounting / Finance	44	2.0 (1.3)	2.2 (1.3) a*
Computer Programming	43	1.7 (1.2)	1.7 (1.0)
Graphics	44	1.6 (1.2)	2.4 (1.3) a**
C. A. D. / C. A. M.	42	1.2 (.6)	1.5 (.9) a*
Tutorials / C. A. I.	42	1.4 (.8)	2.0 (1.2) a**
Utilities	42	1.8 (1.2)	2.2 (1.3) a*
Integrated Packages	43	1.5 (.9)	2.0 (1.2) a**
Other Applications	9	1.7 (1.4)	1.7 (1.4)

Application	N	Start Year 1	End Year 1
Computer Games	35	2.1 (1.1)	1.7 (.9) b**
Word Processing	36	2.8 (1.1)	2.6 (1.2)
Data Base	31	2.5 (1.4)	2.1 (1.3)
Spreadsheet	30	2.4 (1.5)	1.6 (1.0) b**
Communications	32	2.8 (1.2)	2.6 (1.2)
Math / Statistics	30	1.9 (1.2)	1.4 (.7)
Calendar / Scheduling	31	1.9 (1.0)	1.5 (.9)
Accounting / Finance	31	2.3 (1.4)	1.7 (1.2) b**
Computer Programming	30	1.7 (.9)	1.6 (1.0)
Graphics	31	2.2 (1.1)	2.0 (1.2)
C. A. D. / C. A. M.	30	1.5 (.8)	1.4 (.8)
Tutorials / C. A. I.	32	2.0 (1.3)	1.8 (1.1)
Utilities	31	2.1 (1.3)	1.8 (1.0)
Integrated Packages	28	2.0 (1.2)	1.8 (1.2)
Other Applications	5	1.4 (.9)	2.2 (1.6)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

Amos Alonzo Stagg High School - Parents
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	42	2.5 (1.4)	2.9 (1.4) a*
Word Processing	40	2.8 (1.5)	3.3 (1.3) a*
Data Base	35	2.8 (1.7)	2.8 (1.6) a*
Spreadsheet	36	2.4 (1.6)	2.8 (1.6) a**
Communications	39	2.4 (1.5)	3.3 (1.5) a**
Math / Statistics	38	2.2 (1.4)	2.4 (1.5)
Calendar / Scheduling	36	2.3 (1.4)	2.5 (1.3)
Accounting / Finance	36	2.5 (1.5)	2.6 (1.5)
Computer Programming	35	1.7 (1.1)	1.9 (1.3) a**
Graphics	37	1.9 (1.2)	2.5 (1.3) a*
C. A. D. / C. A. M.	34	1.4 (.8)	1.8 (1.1) a**
Tutorials / C. A. I.	35	1.8 (1.2)	2.5 (1.5) a**
Utilities	35	2.0 (1.2)	2.4 (1.3) a**
Integrated Packages	34	2.0 (1.3)	2.5 (1.4) a**
Other Applications	7	1.9 (1.6)	2.1 (2.0)

Application	N	Start Year 1	End Year 1
Computer Games	31	2.9 (1.4)	3.0 (1.4)
Word Processing	31	3.2 (1.3)	3.5 (1.3)
Data Base	23	3.1 (1.5)	2.9 (1.5)
Spreadsheet	24	2.8 (1.6)	2.5 (1.6)
Communications	27	3.3 (1.3)	3.4 (1.2)
Math / Statistics	25	2.2 (1.3)	2.2 (1.2)
Calendar / Scheduling	24	2.5 (1.3)	2.6 (1.3)
Accounting / Finance	24	2.8 (1.5)	2.5 (1.4)
Computer Programming	24	2.0 (1.3)	2.3 (1.4)
Graphics	26	2.5 (1.3)	2.5 (1.2)
C. A. D. / C. A. M.	25	1.8 (1.2)	1.8 (1.1)
Tutorials / C. A. I.	27	2.6 (1.4)	2.3 (1.3)
Utilities	26	2.6 (1.4)	2.5 (1.4)
Integrated Packages	25	2.4 (1.5)	2.4 (1.6)
Other Applications	4	2.0 (2.0)	2.8 (1.7)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

Amos Alonzo Stagg High School - Parents
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	2.0% (4.5%)	4.0% (5.4%)a*
"Employment" work at home	5.5%(12.1%)	3.6% (7.0%)
Watching Television	13.5%(13.3%)	7.8%(14.1%)
Listening to the Radio	8.4%(11.4%)	9.0% (9.1%)
Listening to records, tapes, or CD's	2.0% (3.9%)	2.3% (4.3%)
Talking with friends on the telephone	3.5% (4.6%)	3.5% (2.8%)
Visiting with friends in person	3.8% (5.0%)	6.4% (5.7%)a**
Reading pleasure books or magazines	7.0% (9.2%)	7.1% (5.8%)
Doing a hobby, art or craft	2.1% (5.2%)	3.5% (5.1%)a*
Partic. in club or group activity	1.4% (4.9%)	3.4% (5.9%)a*
Partic. in a sport or exercise	3.1% (5.9%)	7.4%(10.4%)a**
Relaxing (doing nothing at all)	3.4% (5.7%)	4.8% (5.8%)
Watching a movie, concert or play	2.3% (3.4%)	4.4% (3.5%)a**
Attending a sporting event	1.9% (4.4%)	4.0% (6.7%)a*
Activities using the computer at home		
"School" work using the computer	.8% (2.5%)	2.0% (3.6%)
"Employment" work with the computer	1.1% (3.8%)	2.5% (9.8%)
Communicating with an Administrator	.1% (.4%)	2.2% (7.5%)a*
Communicating with a Teacher	.2% (.8%)	1.9% (3.4%)a**
Communicating with a Parent	.0% (.0%)	.3% (1.3%)
Communicating with a Student	.3% (2.0%)	1.0% (3.3%)
Using the school's computer network	.5% (1.4%)	1.1% (2.2%)a*
Working on Prodigy	2.7% (4.4%)	5.2%(11.2%)
Playing games or other entertainment	.8% (1.7%)	1.4% (3.6%)
Use your computer for other purposes	.5% (1.4%)	1.2% (3.3%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=54 for all comparisons.

Amos Alonzo Stagg - Parent Survey #1 - 59 Respondents (77.6%)

Parent Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	10	5	20	47	47	20	9	10	5
20: Meaningless response							1		
100: Technology in general	2	2							
110: Computer/printer in general				1					
111: Computer	2								1
112: Printer				6				1	
121: Modem				1	4				
122: Telephone equipment/service				1	7				
123: Telecommunications services								1	
130: Information services in general/network in general	1							1	
131: Prodigy				3	2				5
140: Electrical Failure					1				
200: No problem/nothing bad/no worst about PH			1	2	2	1		14	1
210: Problem report, current status unknown				1				1	
220: Problem is current	1			4	2			2	
230: Problem has been fixed (general)				3	4				
231: Problem fixed by corporation					3				
232: Problem fixed by school				1	1				
300: No one						1			
311: Teachers				2		24			
321: Corporation technical support						1			
331: Myself					1	8			
333: Another student						2			
334: My parent/another parent						1			
340: A combination of the school and corporation	1					1	9		
401: I "know" what Project Homeroom is	7								
402: I don't "know" what Project Homeroom is	1							1	1
404: I am curious about Project Homeroom		1							
405: No particular reason for participating		1							
410: Project Homeroom and learning about/using the computer	3	9	30				8	1	17
411: Having free computer, printer, equipment, etc.	1	3					5		3
420: Project Homeroom and increased access to teacher(s)	4	2					2		1

Amos Alonzo Stagg - Parent Survey #1 - 59 Respondents (77.6%)

421: Improve student performance/motivation/learn	3	5	1				9		8
422: Improved/better grades/education	4	8	2				3		1
423: Learning in (computer) groups/classes/labs		1					2		
424: Project Homeroom is like regular school	1								
425: Make school work different (easier/harder)	1	1	1						1
426: Computers as teachers	4						3		
428: As an experiment	1						4		1
430: Project Homeroom is a great opportunity		10					5	1	4
431: It is good for student in the future	1	9	3				9		2
441: Student decided/convinced parents		2							
442: Project Homeroom is not for parents, is for students			1				1		
500: It is fun, interesting, good	4	3					6		10
510: Teachers in general									4
511: Field trips/projects									1
512: School work on computer	6	4					4		2
513: I like computers									1
514: I am making a good personal effort									2
520: The same kids all day/benefits of group work									5
530: Increased communications with school	11	3	4	1			23		10
531: Increased communication with home/at school	1	3					2		
532: Improved communication skills	1								
612: I am not using the computer enough								6	
620: The same kids all day/disadvantages of group work								2	
621: Some kids do all the work								4	
622: It does not reflect my/student's personal effort								5	
630: Lack of communication with school								5	
640: Too easy/did not learn much								1	
641: Too hard/too much work								2	
651: Want alternative subjects in Project Homeroom com								1	
661: Lack of support by corporations								1	
662: It is not long enough								1	
664: An overall lack of organization (getting started)								8	

Amos Alonzo Stagg - Parent Survey #2 - 55 Respondents (72.4%)

Parent Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	32	14	15	15	14	9	12
20: Meaningless response			4	6	2		5
30: Discussion of contractual obligations		1					
100: Technology in general	1			1		3	
109: Software in general							1
111: Computer	1				3	6	
112: Printer	7				2		
114: Mouse	2						
115: Keyboard	2						
121: Modem	1						
122: Telephone equipment/service	2	1	2		5	1	
123: Telecommunications services					1		2
130: Information services in general/network in general					2		1
131: Prodigy	5	3			4	2	1
132: School Local Area Network (LAN)	4						2
140: Electrical Failure	1						
200: No problem/nothing bad/no worst about PH					6		3
220: Problem is current	1						
230: Problem has been fixed (general)	2						
231: Problem fixed by corporation	1						
232: Problem fixed by school	1						
233: Problem fixed by home	3						
300: No one					1		
312: School technical support staff	2						
403: Project Homeroom is not what it was said to be				1	2		
410: Project Homeroom and learning about/using the computer		2				7	4
411: Having free computer, printer, equipment, etc.		1				3	
418: Improved/worsened peer interactions			11	2		3	1
419: Integrating class subjects/interdisciplinary		1	2	11		3	
420: Project Homeroom and increased access to teacher(s)						8	1
421: Improve student performance/motivation/learn		3	1	7		3	
422: Improved/better grades/education		2	2	2			
423: Learning in (computer) groups/classes/labs		1	3				
425: Make school work different (easier/harder)			1				1
428: As an experiment		1				1	
429: For the entire family		2		2			
430: Project Homeroom is a great opportunity		3					

Amos Alonzo Stagg - Parent Survey #2 - 55 Respondents (72.4%)

431: It is good for student in the future		4	1				
442: Project Homeroom is not for parents, is for students		1					
500: It is fun, interesting, good		12	5	15		2	1
501: Don't know, unsure		2	1	1		1	
510: Teachers in general		2		1		4	1
511: Field trips/projects						1	
512: School work on computer		2				1	
513: I like computers		2					
515: I like a specific subject				3		1	
520: The same kids all day/benefits of group work		1	7			4	
530: Increased communications with school		1				4	
531: Increased communication with home/at school		1		1		2	4
532: Improved communication skills		2		1		4	
600: It is not fun, boring/did not like				1			
612: I am not using the computer enough		1			3		8
613: I do not like a specific subject					1		2
621: Some kids do all the work			7		1		1
622: It does not reflect my/student's personal effort			1				
631: Lack of communication with home/at home					3		
632: Decreased communication/general lack of communication			2		1		
633: Parent would like to be more involved					3		2
640: Too easy/did not learn much							2
641: Too hard/too much work		1		1	2		3
642: No help/too little help					1		
643: No extra grading/extra credit for Project extra work		1					
644: Grade lowered because of Project Homeroom			2				
651: Want alternative subjects in Project Homeroom core							2
660: Lack of organization by school		1			3		
661: Lack of support by corporations					1		
662: It is not long enough		3					4
663: It's a gimmick					1		
664: An overall lack of organization (getting started)		1			2		
665: time/class length of Project Homeroom classes					1		

Amos Alonzo Stagg - Grade Distribution Summary - English First Semester

	91Q1			91Q2			91E1			91SS		
	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPHO
A+	0.0%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%		0.0%	0.0%	0.0%	0.0%
A	17.1%	11.0%	13.2%	28.9%	10.1%	29.9%	35.5%		13.4%	32.4%	12.8%	21.3%
A-	0.0%	2.4%	5.5%	0.0%	1.8%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	9.2%	2.7%	3.4%	6.6%	1.2%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%
B	18.4%	2.78%	31.1%	34.2%	29.0%	22.2%	34.2%		28.4%	32.4%	28.4%	37.4%
B-	0.0%	3.1%	2.6%	0.0%	2.7%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	3.9%	1.2%	3.4%	2.6%	1.2%	2.1%	0.0%		2.6%	0.0%	0.0%	0.0%
C	23.7%	25.9%	24.7%	13.2%	19.4%	20.9%	27.6%		31.0%	35.3%	26.3%	26.4%
C-	2.6%	3.1%	3.4%	0.0%	1.2%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	0.0%	2.0%	1.7%	0.0%	1.2%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	17.1%	17.3%	7.2%	3.9%	10.7%	7.3%	2.6%		17.7%	0.0%	2.6%	11.9%
D-	0.0%	3.1%	1.7%	0.0%	1.5%	0.9%	0.0%		0.4%	0.0%	0.0%	0.0%
F	2.1%	0.0%	2.1%	10.5%	20.0%	7.3%	0.0%		9.1%	0.0%	0.0%	3.0%

LEGEND:

91Q1 = Fall 1991 first quarter grades
91Q2 = Fall 1991 second quarter grades
91E1 = Fall 1991 semester exam grades
91SS = Fall 1991 end-semester grades

PHE = Project Homeroom English classes aggregate
NPHE = Comparable non-Project Homeroom English classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

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Amos Alonzo Stagg - Grade Distribution Summary - German First Semester

	91Q1			91Q2			91E1			91SS		
	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%		0.0%	0.0%	0.0%	0.0%
A	13.2%	28.8%	13.2%	8.0%	20.7%	29.9%	10.7%		13.4%	8.7%	3.1%	21.3%
A-	1.3%	11.9%	5.5%	0.0%	8.6%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	3.9%	8.5%	3.4%	0.0%	3.4%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%
B	28.9%	16.9%	31.1%	24.0%	17.2%	22.2%	21.3%		28.4%	26.1%	27.6%	37.4%
B-	1.3%	1.7%	2.6%	0.0%	5.2%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	6.6%	5.1%	3.4%	1.3%	5.2%	2.1%	0.0%		0.0%	0.0%	0.0%	0.0%
C	13.2%	13.6%	24.7%	30.7%	13.8%	20.9%	29.3%		31.0%	37.7%	32.8%	26.4%
C-	1.3%	8.5%	3.4%	0.0%	5.2%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	2.6%	0.0%	1.7%	0.0%	5.2%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	22.4%	5.1%	7.2%	22.7%	6.9%	7.3%	20.0%		17.7%	24.6%	6.9%	11.9%
D-	0.0%	0.0%	1.7%	0.0%	1.7%	0.9%	0.0%		0.4%	0.0%	0.0%	0.0%
F	5.3%	0.0%	2.1%	13.3%	6.9%	7.3%	18.7%		9.1%	2.9%	1.7%	3.0%

LEGEND:

91Q1 = Fall 1991 first quarter grades
91Q2 = Fall 1991 second quarter grades
91E1 = Fall 1991 semester exam grades
91SS = Fall 1991 end-semester grades

PHG = Project Homeroom German classes aggregate
NPHG = Comparable non-Project Homeroom German classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Amos Alonzo Stagg - Grade Distribution Summary - History First Semester

	91Q1			91Q2			91E1			91SS		
	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO
A+	0.0%	13.6%	0.0%	0.0%	2.1%	0.4%	0.0%		0.0%	0.0%	0.0%	0.0%
A	38.2%	17.9%	13.2%	60.5%	11.4%	29.9%	34.2%		13.4%	46.1%	25.8%	21.3%
A-	0.0%	3.6%	5.5%	0.0%	5.7%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	0.0%	0.7%	3.4%	0.0%	2.1%	3.0%	0.0%		0.0%	1.3%	0.0%	0.0%
B	40.8%	22.1%	31.1%	26.3%	23.6%	22.2%	18.4%		28.4%	34.2%	27.9%	37.4%
B-	0.0%	6.4%	2.6%	0.0%	3.6%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	0.0%	0.0%	3.4%	0.0%	1.4%	2.1%	0.0%		0.0%	0.0%	0.0%	0.0%
C	19.7%	20.0%	24.7%	9.2%	25.0%	20.9%	47.4%		31.0%	18.4%	27.1%	26.4%
C-	0.0%	1.4%	3.4%	0.0%	7.1%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.7%	1.7%	0.0%	2.1%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	1.3%	9.3%	7.2%	3.9%	4.3%	7.3%	0.0%		17.7%	0.0%	14.0%	11.9%
D-	0.0%	1.4%	1.7%	0.0%	2.9%	0.9%	0.0%		0.4%	0.0%	0.0%	0.0%
F	0.0%	2.9%	2.1%	0.0%	8.6%	7.3%	0.0%		9.1%	0.0%	5.2%	3.0%

LEGEND:

91Q1 = Fall 1991 first quarter grades
91Q2 = Fall 1991 second quarter grades
91E1 = Fall 1991 semester exam grades
91SS = Fall 1991 end-semester grades

PHH = Project Homeroom history classes aggregate
NPHH = Comparable non-Project Homeroom history classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Amos Alonzo Stagg - Grade Distribution Summary - English Second Semester

	92Q3			92Q4			92E2			92SS		
	PHE	NPHE	NPHO	PHE	NPHE	NPHO	PHE	NPHE	NPH	PHE	NPHE	NPHO
A+	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
A	29.7%	13.7%	19.9%	27.1%	15.9%	26.5%	45.3%		23.1%	31.4%	15.9%	25.1%
A-	1.4%	3.3%	10.2%	1.4%	0.7%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	5.4%	1.0%	2.5%	7.1%	1.7%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
B	27.0%	30.3%	22.9%	37.1%	28.6%	27.4%	42.7%		21.4%	51.4%	35.2%	29.4%
B-	2.7%	3.3%	2.5%	0.0%	1.0%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	6.8%	2.0%	1.7%	7.1%	0.7%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%
C	10.8%	22.0%	18.2%	15.7%	23.6%	19.7%	9.3%		20.1%	14.3%	25.2%	23.4%
C-	2.7%	1.7%	2.1%	0.0%	0.3%	2.6%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	0.0%	0.7%	0.0%	1.4%	0.0%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	5.4%	8.3%	7.6%	0.0%	12.3%	8.1%	0.0%		18.8%	0.0%	15.3%	16.2%
D-	0.0%	2.3%	1.7%	0.0%	0.7%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
F	8.1%	10.7%	10.6%	2.9%	14.6%	8.1%	2.7%		16.6%	2.9%	8.3%	6.0%

LEGEND:

92Q3 = Spring 1992 first quarter grades
92Q4 = Spring 1992 second-quarter grades
92E2 = Spring 1992 semester exam grades
92SS = Spring 1992 end-semester grades

PHE = Project Homeroom English classes aggregate
NPHE = Comparable non-Project Homeroom English classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

Amos Alonzo Stagg - Grade Distribution Summary - German Second Semester

	92Q3			92Q4			92E2			92SS		
	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO	PHG	NPHG	NPHO
A+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
A	14.5%	21.4%	19.9%	10.5%	23.6%	26.5%	7.9%		23.1%	10.5%	29.1%	25.1%
A-	0.0%	7.1%	10.2%	1.3%	1.8%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	0.0%	1.8%	2.5%	0.0%	3.6%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
B	23.7%	19.6%	22.9%	31.6%	9.1%	27.4%	34.2%		21.4%	26.3%	25.5%	29.4%
B-	0.0%	1.8%	2.5%	0.0%	5.5%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	0.0%	1.8%	1.7%	0.0%	9.1%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%
C	27.6%	14.3%	18.2%	34.2%	16.4%	19.7%	31.6%		20.1%	35.5%	20.0%	23.4%
C-	0.0%	5.4%	2.1%	1.3%	7.3%	2.6%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	0.0%	1.8%	0.0%	0.0%	3.6%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	23.7%	12.5%	7.6%	17.1%	7.3%	8.1%	18.4%		18.8%	23.7%	18.2%	16.2%
D-	0.0%	5.4%	1.7%	0.0%	1.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
F	10.5%	7.1%	10.6%	3.9%	10.9%	8.1%	7.9%		16.6%	3.9%	7.3%	6.0%

LEGEND:

92Q3 = Spring 1992 first quarter grades
92Q4 = Spring 1992 second quarter grades
92E2 = Spring 1992 semester exam grades
92SS = Spring 1992 end-semester grades

PHG = Project Homeroom German classes aggregate
NPHG = Comparable non-Project Homeroom German classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

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Amos Alonzo Stagg - Grade Distribution Summary - History Second Semester

	92Q3			92Q4			92E2			92SS		
	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO	PHH	NPHH	NPHO
A+	0.0%	0.9%	0.0%	0.0%	0.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
A	43.4%	9.3%	19.9%	45.3%	6.6%	26.5%	32.0%		23.1%	41.3%	17.2%	25.1%
A-	0.0%	12.1%	10.2%	0.0%	10.7%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%
B+	0.0%	1.9%	2.5%	0.0%	3.8%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
B	32.9%	19.6%	22.9%	28.0%	22.1%	27.4%	33.3%		21.4%	33.3%	28.7%	29.4%
B-	0.0%	3.7%	2.5%	0.0%	8.2%	0.9%	0.0%		0.0%	0.0%	0.0%	0.0%
C+	0.0%	3.7%	1.7%	0.0%	5.7%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%
C	19.7%	27.1%	18.2%	18.7%	22.1%	19.7%	16.0%		20.1%	22.7%	37.7%	23.4%
C-	0.0%	12.1%	2.1%	0.0%	4.1%	2.6%	0.0%		0.0%	0.0%	0.0%	0.0%
D+	0.0%	1.9%	0.0%	0.0%	0.8%	1.3%	0.0%		0.0%	0.0%	0.0%	0.0%
D	0.0%	7.5%	7.6%	5.3%	4.1%	8.1%	14.7%		18.8%	0.0%	9.0%	16.2%
D-	0.0%	0.0%	1.7%	0.0%	1.6%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
F	3.9%	0.0%	10.6%	2.7%	9.8%	8.1%	4.0%		16.6%	2.7%	7.4%	6.0%

LEGEND:

92Q3 = Spring 1992 first quarter grades
92Q4 = Spring 1992 second quarter grades
92E2 = Spring 1992 semester exam grades
92SS = Spring 1992 end-semester grades

PHH = Project Homeroom History classes aggregate
NPHH = Comparable non-Project Homeroom History classes aggregate
NPHO = Non-Project Homeroom classes aggregate (Project Homeroom students only)

All High Schools - Students
"How much do you use each application?"

Application	N	Before PH		Start Year 1	
Computer Games	220	2.7	(1.3)	3.3	(1.4)a**
Word Processing	219	2.7	(1.4)	4.2	(1.0)a**
Data Base	211	1.5	(.9)	2.5	(1.3)a**
Spreadsheet	216	1.6	(1.2)	3.1	(1.5)a**
Communications	217	1.7	(1.2)	3.6	(1.4)a**
Math / Statistics	215	1.9	(1.2)	2.7	(1.4)a**
Calendar / Scheduling	214	1.6	(1.1)	2.0	(1.3)a**
Accounting / Finance	209	1.2	(.6)	1.5	(1.0)a**
Computer Programming	209	1.7	(1.0)	2.1	(1.3)a**
Graphics	214	2.2	(1.4)	3.2	(1.5)a**
C. A. D. / C. A. M.	202	1.3	(.9)	1.7	(1.2)a**
Tutorials / C. A. I.	203	1.5	(1.0)	2.1	(1.3)a**
Utilities	206	1.7	(1.1)	2.4	(1.5)a**
Integrated Packages	197	1.6	(1.2)	2.5	(1.7)a**
Other Applications	26	2.0	(1.6)	2.4	(1.8)

Application	N	Start Year 1		End Year 1	
Computer Games	202	3.3	(1.4)	2.5	(1.3)b**
Word Processing	202	4.3	(1.0)	4.1	(1.0)b*
Data Base	196	2.6	(1.3)	2.4	(1.2)
Spreadsheet	199	3.1	(1.5)	2.7	(1.3)b**
Communications	203	3.6	(1.4)	3.0	(1.5)b**
Math / Statistics	201	2.7	(1.4)	2.2	(1.2)b**
Calendar / Scheduling	197	2.0	(1.3)	1.5	(.9)b**
Accounting / Finance	193	1.5	(1.0)	1.2	(.6)b**
Computer Programming	195	2.1	(1.3)	1.7	(1.1)b**
Graphics	196	3.2	(1.5)	2.6	(1.3)b**
C. A. D. / C. A. M.	183	1.7	(1.2)	1.4	(.8)b**
Tutorials / C. A. I.	192	2.2	(1.3)	1.7	(1.0)b**
Utilities	195	2.5	(1.5)	2.4	(1.4)b**
Integrated Packages	183	2.5	(1.7)	1.9	(1.3)b**
Other Applications	13	2.3	(1.8)	2.2	(1.7)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

All High Schools - Students
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	215	3.7 (1.4)	4.0 (1.3)a**
Word Processing	214	3.0 (1.5)	4.4 (1.0)a**
Data Base	202	1.8 (1.2)	2.8 (1.5)a**
Spreadsheet	208	1.9 (1.3)	3.3 (1.5)a**
Communications	209	1.8 (1.3)	3.7 (1.5)a**
Math / Statistics	204	2.0 (1.3)	2.8 (1.5)a**
Calendar / Scheduling	205	1.8 (1.3)	2.2 (1.5)a**
Accounting / Finance	199	1.4 (1.0)	1.7 (1.2)a**
Computer Programming	202	1.8 (1.2)	2.2 (1.4)a**
Graphics	207	2.4 (1.5)	3.4 (1.6)a**
C. A. D. / C. A. M.	198	1.4 (1.0)	1.8 (1.3)a**
Tutorials / C. A. I.	198	1.6 (1.1)	2.4 (1.5)a**
Utilities	198	1.9 (1.2)	2.5 (1.5)a**
Integrated Packages	191	1.7 (1.3)	2.5 (1.7)a**
Other Applications	30	1.9 (1.5)	2.6 (1.9)

Application	N	Start Year 1	End Year 1
Computer Games	195	4.1 (1.3)	4.1 (1.3)
Word Processing	199	4.4 (.9)	4.5 (.9)a*
Data Base	189	2.9 (1.5)	3.1 (1.4)a*
Spreadsheet	195	3.4 (1.5)	3.5 (1.4)b*
Communications	197	3.7 (1.4)	3.5 (1.5)b*
Math / Statistics	191	2.8 (1.5)	2.8 (1.4)
Calendar / Scheduling	186	2.3 (1.5)	2.3 (1.4)
Accounting / Finance	182	1.7 (1.2)	1.7 (1.1)b*
Computer Programming	185	2.3 (1.4)	2.0 (1.3)b**
Graphics	191	3.3 (1.6)	3.0 (1.5)b**
C. A. D. / C. A. M.	178	1.9 (1.4)	1.6 (1.1)b**
Tutorials / C. A. I.	186	2.4 (1.5)	2.2 (1.5)
Utilities	185	2.6 (1.5)	2.7 (1.5)
Integrated Packages	173	2.5 (1.7)	2.3 (1.6)
Other Applications	15	2.3 (1.8)	3.3 (2.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

All High Schools - Students
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	9.3% (9.6%)	9.5% (7.0%)
"Employment" work at home	1.6% (3.2%)	2.0% (5.1%)
Watching Television	8.3% (7.8%)	8.9% (7.4%)
Listening to the Radio	5.8% (5.4%)	8.3% (7.4%) a**
Listening to records, tapes, or CD's	5.6% (5.9%)	7.0% (6.3%) a**
Talking with friends on the telephone	5.9% (5.2%)	6.8% (5.2%) a*
Visiting with friends in person	7.7% (8.4%)	9.8% (9.5%) a*
Reading pleasure books or magazines	2.8% (3.1%)	2.7% (3.2%)
Doing a hobby, art or craft	3.1% (3.9%)	3.3% (4.6%)
Partic. in club or group activity	2.5% (3.9%)	2.7% (3.7%)
Partic. in a sport or exercise	6.6% (7.2%)	7.6% (6.9%) a*
Relaxing (doing nothing at all)	5.0% (6.8%)	5.8% (8.7%)
Watching a movie, concert or play	3.1% (3.5%)	3.6% (3.2%)
Attending a sporting event	2.3% (3.2%)	2.2% (3.1%)
Activities using the computer at home		
"School" work using the computer	5.7% (5.6%)	4.8% (3.7%) b*
"Employment" work with the computer	.8% (2.7%)	.5% (1.7%)
Communicating with an Administrator	.4% (1.0%)	.4% (1.2%)
Communicating with a Teacher	1.1% (1.5%)	1.0% (1.6%)
Communicating with a Parent	.8% (2.4%)	1.3% (4.4%)
Communicating with a Student	2.8% (3.2%)	2.3% (3.2%) b*
Using the school's computer network	1.3% (2.1%)	1.8% (3.4%) b*
Working on Prodigy	5.6% (4.7%)	3.9% (3.4%) b**
Playing games or other entertainment	3.0% (3.5%)	2.5% (3.5%)
Use your computer for other purposes	1.0% (2.5%)	1.4% (4.7%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time in hours spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=233 for all comparisons.

All High Schools - Student Survey #1 - 222 Respondents (91.7%)

Student Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	18	16	52	152	178	22	10	12	3
20: Meaningless response	3	1		1	1		2	1	0
100: Technology in general	1		1	1			1	7	
110: Computer/printer in general	2			6					
111: Computer	7			9				4	24
112: Printer				36					2
113: Monitor				1					
114: Mouse			1	4					
115: Keyboard				1					
120: Telecommunications in general				6					
121: Modem			1	1	9			1	1
122: Telephone equipment/service		2		1	26				8
123: Telecommunications services				2	1				
130: Information services in general/network in general	1							27	
131: Prodigy	1		1	16	9		12	5	29
140: Electrical Failure					4				
200: No problem/nothing bad/no worst about PH				1	2	3		18	1
210: Problem report, current status unknown				14	8			6	
220: Problem is current				24	14			30	
230: Problem has been fixed (general)				17	12			2	
231: Problem fixed by corporation				1	4				
232: Problem fixed by school				1	2				
233: Problem fixed by home				3	2				
300: No one						9			
310: Schools in general	1								
311: Teachers					1	127			
312: School technical support staff						1			
321: Corporation technical support						2			
330: Someone from home (in general)						19			
331: Myself						5			
333: Another student					1	46			
334: My parent/another parent						8			

All High Schools - Student Survey #1 - 222 Respondents (91.7%)

340: A combination of the school and corporation	1								
401: I "know" what Project Homeroom is	8	1					1		
402: I don't "know" what Project Homeroom is	24	2	2				4	3	1
403: Project Homeroom is not what it was said to be	1						1	1	
404: I am curious about Project Homeroom		2							
405: No particular reason for participating		1	4						
410: Project Homeroom and learning about/using the computer	39	45	126				42	1	35
411: Having free computer, printer, equipment, etc.	31	40	7				62	1	34
420: Project Homeroom and increased access to teacher(s)			1				21		1
421: Improve student performance/motivation/learn	4	12	14				4		11
422: Improved/better grades/education	1	4	16				2		5
423: Learning in (computer) groups/classes/labs	12		4				9	1	
424: Project Homeroom is like regular school	7						5	1	
425: Make school work different (easier/harder)	4	3	2				5		1
426: Computers as teachers	9						23		
427: Individualized learning	1	1					2		
428: As an experiment	1						4		
429: For the entire family		1							
430: Project Homeroom is a great opportunity	4	32	3				6		4
431: It is good for student in the future	1	17	17				1		3
432: The student had no choice about participating		2							
440: Parent made student participate		30							
441: Student decided/convinced parents	1	10							
500: It is fun, interesting, good	19	56	2				48	3	49
510: Teachers in general							6		38
511: Field trips/projects	2						6		15
512: School work on computer	40	1					48		15
513: I like computers		2							
514: I am making a good personal effort									1
515: I like a specific subject									4
520: The same kids all day/benefits of group work	1						8	1	14
530: Increased communications with school	15	4	4				20		4
531: Increased communication with home/at school	1		1				5		

532: Improved communication skills			1				16	1	4
600: It is not fun, boring/did not like	8						5	11	6
610: Teachers in general								7	
611: Field trips/projects								6	
612: I am not using the computer enough	7						3	12	
613: I do not like a specific subject								12	
620: The same kids all day/disadvantages of group work							4	17	
621: Some kids do all the work								1	
622: It does not reflect my/student's personal effort								1	
630: Lack of communication with school	1							2	
632: Decreased communication/general lack of communication								1	
640: Too easy/did not learn much								2	
641: Too hard/too much work	1		1				17	52	
642: No help/too little help								4	
643: No extra grading/extra credit for Project extra work								2	
650: Difficulties in scheduling electives								3	
651: Want alternative subjects in Project Homeroom core								4	
660: Lack of organization by school							2	6	
661: Lack of support by corporations								1	
663: It's a gimmick	2								
664: An overall lack of organization (getting started)							2	30	
665: time/class length of Project Homeroom classes								4	1

All High Schools - Student Survey #2 - 2^3 Respondents (92.2%)

420: Project Homeroom and increased access to teacher(s)		1				10	2
421: Improve student performance/motivation/learn		3	1	7		3	
422: Improved/better grades/education		4	2			2	
423: Learning in (computer) groups/classes/labs		1	41	8	4	6	
424: Project Homeroom is like regular school		1			1		
425: Make school work different (easier/harder)		5		2		1	
428: As an experiment		5			1		
429: For the entire family		1					
430: Project Homeroom is a great opportunity		6	1			2	
431: It is good for student in the future		14		2		2	
440: Parent made student participate		1					
500: It is fun, interesting, good	1	49	27	10		8	1
501: Don't know, unsure	5	3	3	5	1	1	6
510: Teachers in general		16	5	2		30	
511: Field trips/projects		2	37	18		27	12
512: School work on computer		2				3	
513: I like computers		7					
515: I like a specific subject		2	55	45	1	5	2
520: The same kids all day/benefits of group work		17	11	2		26	2
530: Increased communications with school		2					
531: Increased communication with home/at school			3				
532: Improved communication skills			1	1		1	
600: It is not fun, boring/did not like	1	32	19	5	9	8	6
610: Teachers in general		4	1	2	21		5
611: Field trips/projects		1	13	9	29		9
612: I am not using the computer encugh		4		2	4		15
613: I do not like a specific subject		4		20	19		5
614: I don't like IBM							1
615: I do not like computers		2		1	3		1
620: The same kids all day/disadvantages of group work		17	7	1	22	1	8
621: Some kids do all the work			21				1
622: It does not reflect my/student's personal effort					1		
630: Lack of communication with school			1	1	2		

All High Schools - Student Survey #2 - 223 Respondents (92.2%)

Student Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	[illegible]	Q7
10: No response	116	19	31	47	13	2[illegible]	33
20: Meaningless response	3	9	5	8	3	2	9
30: Discussion of contractual obligations		1					1
100: Technology in general	7				8	1	2
109: Software in general	8		6	16	1	1	
110: Computer/printer in general					1		
111: Computer	15	24	10		8	3	3
112: Printer	3[illegible]		1				
113: Monitor	1						
114: Mouse	6						
115: Keyboard	9						
116: Marketing i.e. of IBM						1	1
120: Telecommunications in general	3						
121: Modem	7	1					1
122: Telephone equipment/service	9					6	
123: Telecommunications services		1					3
130: Information services in general/network in general	1						
131: Prodigy	15		11	5	1	23	1
132: School Local Area Network (LAN)	9	7	3		13		30
200: No problem/nothing bad/no worst about PH	3	1	3		5		6
220: Problem is current	14			1			
230: Problem has been fixed (general)	32						
232: Problem fixed by school	3	1					
233: Problem fixed by home	3						
311: Teachers							7
312: School technical support staff	2	1					
331: Myself	2						
403: Project Homeroom. is not what it was said to be				1	4		1
410: Project Homeroom and learning about/using the computer		21	2	12		32	12
411: Having free computer, printer, equipment, etc.		10			1	38	
418: Improved/worsened peer interactions		3	19	2		19	1
419: Integrating class subjects/interdisciplinary		1	9	39	2	2	3

631: Lack of communication with home/at home							1
632: Decreased communication/general lack of communication					1		2
633: Parent would like to be more involved					1		
640: Too easy/did not learn much		7	1	3	1		
641: Too hard/too much work		24	7	6	51		28
644: Grade lowered because of Project Homeroom		5	4	1	4		
650: Difficulties in scheduling electives		12		1	3		6
651: Want alternative subjects in Project Homeroom core				1			2
660: Lack of organization by school		2	2	1	7		26
661: Lack of support by corporations					2		2
662: It is not long enough		1			1		2
664: An overall lack of organization (getting started)		3			8	1	9
665: time/class length of Project Homeroom classes					3	2	
700: New Trier's "leveling" system					2		
701: The Evaluator's surveys					5		2
710: The Project is keeping kids home at night		2					

All High Schools - Parents
"How much do you use each application?"

Application	N	Before PH	Start Year 1
Computer Games	166	1.8 (1.0)	2.0 (1.2) a*
Word Processing	167	2.6 (1.5)	3.1 (1.4) a**
Data Base	148	2.1 (1.4)	2.3 (1.4) a*
Spreadsheet	147	2.0 (1.4)	2.2 (1.4) a**
Communications	150	1.8 (1.3)	2.4 (1.4) a**
Math / Statistics	148	1.7 (1.1)	1.8 (1.2)
Calendar / Scheduling	151	1.7 (1.2)	1.7 (1.2)
Accounting / Finance	150	1.9 (1.3)	1.9 (1.3)
Computer Programming	148	1.6 (1.2)	1.6 (1.1)
Graphics	148	1.6 (1.1)	2.0 (1.2) a**
C. A. D. / C. A. M.	141	1.2 (.7)	1.4 (.8) a**
Tutorials / C. A. I.	143	1.3 (.8)	1.7 (1.1) a**
Utilities	145	1.6 (1.1)	1.8 (1.3) a**
Integrated Packages	145	1.4 (.9)	1.7 (1.1) a**
Other Applications	44	1.3 (1.1)	1.7 (1.4)

Application	N	Start Year 1	End Year 1
Computer Games	96	2.0 (1.1)	1.5 (.9) b**
Word Processing	87	2.9 (1.3)	2.7 (1.3) b*
Data Base	75	2.2 (1.4)	1.8 (1.1) b*
Spreadsheet	75	2.1 (1.4)	1.7 (1.2) b*
Communications	78	2.5 (1.5)	2.1 (1.3)
Math / Statistics	73	1.6 (1.1)	1.4 (.9)
Calendar / Scheduling	75	1.6 (1.0)	1.5 (1.0)
Accounting / Finance	76	1.8 (1.2)	1.6 (1.5)
Computer Programming	73	1.5 (.9)	1.4 (.9)
Graphics	73	1.9 (1.1)	1.7 (1.1)
C. A. D. / C. A. M.	68	1.3 (.7)	1.3 (.6)
Tutorials / C. A. I.	72	1.8 (1.1)	1.6 (1.0)
Utilities	73	1.8 (1.3)	1.7 (1.1)
Integrated Packages	67	1.6 (1.1)	1.6 (1.1)
Other Applications	21	1.4 (1.1)	1.4 (1.0)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I use this application rarely" and a value of 5 corresponded to "I use this application often." Table values are reported as "mean (std dev)."

All High Schools - Parents
"How comfortable are you using each application?"

Application	N	Before PH	Start Year 1
Computer Games	148	2.4 (1.5)	2.7 (1.5)a*
Word Processing	146	2.9 (1.6)	3.4 (1.4)a**
Data Base	127	2.4 (1.6)	2.6 (1.5)a*
Spreadsheet	131	2.4 (1.6)	2.6 (1.6)a**
Communications	133	2.1 (1.5)	2.8 (1.5)a**
Math / Statistics	131	1.9 (1.3)	2.2 (1.4)a**
Calendar / Scheduling	131	2.0 (1.5)	2.3 (1.4)a**
Accounting / Finance	131	2.2 (1.5)	2.3 (1.5)
Computer Programming	128	1.7 (1.2)	1.9 (1.3)a**
Graphics	129	1.9 (1.3)	2.2 (1.4)a**
C. A. D. / C. A. M.	125	1.4 (.9)	1.6 (1.1)a**
Tutorials / C. A. I.	127	1.7 (1.1)	2.0 (1.4)a**
Utilities	128	1.8 (1.3)	2.1 (1.4)a**
Integrated Packages	125	1.7 (1.2)	2.0 (1.3)a**
Other Applications	39	1.5 (1.1)	1.9 (1.5)a*

Application	N	Start Year 1	End Year 1
Computer Games	75	2.9 (1.5)	2.7 (1.4)
Word Processing	78	3.3 (1.3)	3.2 (1.5)
Data Base	63	2.6 (1.6)	2.3 (1.5)
Spreadsheet	66	2.5 (1.6)	2.3 (1.5)
Communications	69	2.8 (1.5)	2.7 (1.6)
Math / Statistics	62	2.1 (1.4)	1.9 (1.3)
Calendar / Scheduling	64	2.2 (1.4)	2.2 (1.4)
Accounting / Finance	64	2.2 (1.5)	2.0 (1.3)
Computer Programming	61	1.8 (1.3)	1.7 (1.3)
Graphics	65	2.2 (1.4)	2.0 (1.3)
C. A. D. / C. A. M.	60	1.6 (1.1)	1.5 (1.0)
Tutorials / C. A. I.	64	2.1 (1.4)	1.9 (1.3)
Utilities	64	2.2 (1.5)	2.1 (1.5)
Integrated Packages	60	2.0 (1.4)	1.9 (1.4)
Other Applications	14	1.4 (1.1)	1.6 (1.2)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to indicate their use of the various computer applications utilizing a 1 to 5 interval scale. A value of 1 corresponded to "I am very uncomfortable with this application" and a value of 5 corresponded to "I am very comfortable with this application." Table values are reported as "mean (std dev)."

All High Schools - Parents
"What percent of your time do you spend on each activity?"

Activities not involving computer	Start Year 1	End Year 1
"School" work at home	2.0% (4.2%)	4.0% (8.0%)a*
"Employment" work at home	6.6%(13.2%)	6.3%(12.4%)
Watching Television	14.2%(13.2%)	16.4%(12.6%)a*
Listening to the Radio	7.3%(10.2%)	9.5%(10.4%)a*
Listening to records, tapes, or CD's	2.0% (3.4%)	2.8% (4.2%)
Talking with friends on the telephone	3.9% (4.7%)	4.4% (4.5%)a**
Visiting with friends in person	4.1% (5.2%)	5.8% (5.3%)a**
Reading pleasure books or magazines	8.2% (9.5%)	7.7% (6.6%)a*
Doing a hobby, art or craft	2.6% (5.6%)	3.8% (5.2%)a*
Partic. in club or group activity	1.9% (4.4%)	3.2% (6.0%)a**
Partic. in a sport or exercise	3.5% (5.9%)	6.4% (9.4%)a**
Relaxing (doing nothing at all)	4.0% (6.3%)	6.2% (8.1%)a**
Watching a movie, concert or play	3.5% (4.7%)	4.8% (3.9%)a**
Attending a sporting event	2.0% (4.1%)	3.3% (6.1%)a*
Activities using the computer at home		
"School" work using the computer	.9% (2.4%)	1.4% (2.9%)
"Employment" work with the computer	2.5% (8.0%)	2.8% (8.8%)
Communicating with an Administrator	.1% (.5%)	1.5% (6.2%)a**
Communicating with a Teacher	.3% (1.5%)	1.1% (2.6%)a**
Communicating with a Parent	.2% (1.4%)	.3% (1.5%)
Communicating with a Student	.9% (4.9%)	.7% (2.7%)
Using the school's computer network	.3% (1.1%)	.7% (1.7%)a*
Working on Prodigy	2.3% (4.5%)	3.7% (8.0%)
Playing games or other entertainment	1.0% (3.4%)	1.6% (5.4%)
Use your computer for other purposes	1.1% (3.4%)	1.7% (5.8%)

LEGEND: a = significant increase
b = significant decrease

* = $p < .05$
** = $p < .01$

NOTE: The respondents were asked to estimate the amount of time (in hours) spent per week engaged in the above activities. Percentages were calculated by dividing each estimate by the total of all estimates. Table values are reported as "mean (std dev)." N=117 for all comparisons.

All High Schools - Parent Survey #1 - 196 Respondents (81.0%)

Parent Survey #1 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
10: No response	69	59	89	157	166	103	75	68	58
20: Meaningless response		1	1				2		
100: Technology in general	3	2	1					2	
110: Computer/printer in general				1					
111: Computer	7			4				1	2
112: Printer				14				1	
114: Mouse				2					
115: Keyboard				4					
116: Marketing i.e. of IBM	1								
121: Modem				1	8				
122: Telephone equipment/service				3	20				
123: Telecommunications services								3	
130: Information services in general/network in general	1		1	4			1	14	1
131: Prodigy				5	6			2	11
140: Electrical Failure					1				
200: No problem/nothing bad/no worst about PH			2	6	2	11	1	32	2
210: Problem report, current status unknown				3	2			2	
220: Problem is current	1		2	8	11		2	21	1
230: Problem has been fixed (general)				14	8				
231: Problem fixed by corporation					3				
232: Problem fixed by school				3	1				
233: Problem fixed by home				1	1				
300: No one						6			
310: Schools in general				1					
311: Teachers				2		43			
320: Corporations (in general)						2			
321: Corporation technical support						3			
331: Myself					1	21			
332: Someone else in my family						1			
333: Another student						3			
334: My parent/another parent						5			
340: A combination of the school and corporation	1					1	14		1

401: I "know" what Project Homeroom is	16								1
402: I don't "know" what Project Homeroom is	17							2	1
403: Project Homeroom is not what it was said to be							1	4	
404: I am curious about Project Homeroom		1							
405: No particular reason for participating		2							
410: Project Homeroom and learning about/using the computer	12	36	76				20	2	50
411: Having free computer, printer, equipment, etc.	3	6					12		9
420: Project Homeroom and increased access to teacher(s)	6	4					5		4
421: Improve student performance/motivation/learn	5	14	3				23	1	27
422: Improved/better grades/education	10	20	9				5		7
423: Learning in (computer) groups/classes/labs		2					3		
424: Project Homeroom is like regular school	1								
425: Make school work different (easier/harder)	1	3	1				1		1
426: Computers as teachers	7						5		
428: As an experiment	5						6	1	1
430: Project Homeroom is a great opportunity		26	1				6	3	7
431: It is good for student in the future	2	16	4				15		5
441: Student decided/convinced parents		8							
442: Project Homeroom is not for parents, is for students			6				1		
500: It is fun, interesting, good	8	10	1	1			19	1	18
510: Teachers in general									6
511: Field trips/projects									1
512: School work on computer	20	8					14		20
513: I like computers									3
514: I am making a good personal effort									2
520: The same kids all day/benefits of group work									6
530: Increased communications with school	22	5	12	1			46		15
531: Increased communication with home/at school	4	5					2		1
532: Improved communication skills	1						1		
600: It is not fun, boring/did not like							1	1	
610: Teachers in general								1	
612: I am not using the computer enough								16	
614: I don't like IBM								1	

620: The same kids all day/disadvantages of group work							1	5	
621: Some kids do all the work								4	
622: It does not reflect my/student's personal effort								7	
630: Lack of communication with school			1	1				14	
640: Too easy/did not learn much								4	
641: Too hard/too much work							1	2	1
642: No help/too little help								1	
650: Difficulties in scheduling electives								3	
651: Want alternative subjects in Project Homeroom core								3	
660: Lack of organization by school								1	
661: Lack of support by corporations							1	2	
662: It is not long enough			1					2	
664: An overall lack of organization (getting started)			1	3			1	21	

All High Schools - Parent Survey #2 - 122 Respondents (50.4%)

Parent Survey #2 Textual Responses Conceptual Category	Q1	Q2	Q3	Q4	Q5	Q6	Q7
10: No response	74	34	39	44	27	23	32
20: Meaningless response	1	1	8	10	3	2	7
30: Discussion of contractual obligations		1					
100: Technology in general	2		1	1	1	4	2
109: Software in general	3	3	1	1	2		2
111: Computer	5				8	8	
112: Printer	17				3		
114: Mouse	2						
115: Keyboard	4						
121: Modem	1				1		
122: Telephone equipment/service	4	1	2		5	1	
123: Telecommunications services	1		1		1		2
130: Information services in general/network in general				3	12	1	2
131: Prodigy	7	5	3	1	5	6	1
132: School Local Area Network (LAN)	4		1		2		16
140: Electrical Failure	1						
200: No problem/nothing bad/no worst about PH					18		3
220: Problem is current	6						
230: Problem has been fixed (general)	9						
231: Problem fixed by corporation	1						
232: Problem fixed by school	3						
233: Problem fixed by home	5						
300: No one					1		
312: School technical support staff	2						
321: Corporation technical support							1
403: Project Homeroom is not what it was said to be		2	1	2	7		2
410: Project Homeroom and learning about/using the computer		5		1		23	7
411: Having free computer, printer, equipment, etc.		6				12	1
418: Improved/worsened peer interactions			18	2	1	5	1
419: Integrating class subjects/interdisciplinary		1	4	24		4	
420: Project Homeroom and increased access to teacher(s)		2				11	1
421: Improve student performance/motivation/learn		9	3	9		7	

All High Schools - Parent Survey #2 - 122 Respondents (50.4%)

422: Improved/better grades/education		3	2	3		1	
423: Learning in (computer) groups/classes/labs		4	3				
425: Make school work different (easier/harder)			1			1	1
426: Computers as teachers		2				2	1
428: As an experiment		2			1	1	
429: For the entire family		4		2			
430: Project Homeroom is a great opportunity		7				3	
431: It is good for student in the future		6	1			1	
442: Project Homeroom is not for parents, is for students		1	1				
443: I(we) don't use computer much		1			2		
500: It is fun, interesting, good		24	11	27		5	4
501: Don't know, unsure		2	7	6		1	2
510: Teachers in general		4		1		9	1
511: Field trips/projects						1	1
512: School work on computer		4	2	2		2	
513: I like computers		4					
515: I like a specific subject				11		3	
520: The same kids all day/benefits of group work		1	21			5	2
530: Increased communications with school		2				7	
531: Increased communication with home/at school		1	1	1		2	8
532: Improved communication skills		3		1		4	
600: It is not fun, boring/did not like		3	1	3			
610: Teachers in general				1			
611: Field trips/projects					1		
612: I am not using the computer enough		1			4		9
613: I do not like a specific subject					2		3
620: The same kids all day/disadvantages of group work		1			1		
621: Some kids do all the work			11		1		1
622: It does not reflect my/student's personal effort		1	1		1		
630: Lack of communication with school					2		
631: Lack of communication with home/at home					4		
632: Decreased communication/general lack of communication			3		1		
633: Parent would like to be more involved					5	1	4

640: Too easy/did not learn much							3
641: Too hard/too much work		1		1	3		3
642: No help/too little help		1			1		
643: No extra grading/extra credit for Project extra work		1					
644: Grade lowered because of Project Homeroom			3				
650: Difficulties in scheduling electives					1		
651: Want alternative subjects in Project Homeroom core		1			1		3
660: Lack of organization by school		2			7		5
661: Lack of support by corporations					2		1
662: It is not long enough		3					6
663: It's a gimmick					1		
664: An overall lack of organization (getting started)		1			6		2
665: time/class length of Project Homeroom classes					2		
700: New Trier's "leveling" system					2		1
710: The Project is keeping kids home at night							1

School Structured Computer Learning Activities and Participation in Out-of-School Structured Activities

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Abstract

Student participation in structured activities, both in and out of school, has been positively associated with increased academic achievement. Learning to use a computer and application software can be a structured activity. This study investigated 220 students in three high schools participating in a special program; one goal of which was teaching the students to be proficient computer users. A significant relationship was found between reports of higher use and comfort with the targeted software applications and a greater participation in out-of-school structured activities. These results provide support for using the process of computer learning as a method for modeling successful engagement in other structured activities. (keywords: COMPUTER-EDUCATION, STRUCTURED-TIME, EXTRACURRICULAR)

School Structured Computer Learning Activities and Participation in Out-of-School Structured Activities

The education literature is filled with research addressing the relationship between new curricular offerings and student learning. The measures most often used to report student learning gains are individual grades, overall grade point averages, standardized test scores, and others specifically suited to fit the intervention. Successful academic achievement is not, however, just the result of student participation in classroom activities. The research is also clear in demonstrating that student participation in extracurricular activities such as school sponsored athletics (Gifford & Dean, 1990), with community service organizations (Calabrese & Schumer, 1986), and even working at a part-time job (Willits & Willits, 1986) is positively related to academic success. Shanahan and Walberg (1985) further reported that, beyond the fixed characteristics of students, a major part of the differences in students' achievement is linked to their out-of-school experiences.

Camp (1990) separated extracurricular predictors of academic achievement, as evidenced by high school grade point average and high school grades, into the following categories: (a) TV Habits; (b) Study Habits; (c) Job Time; and (d) Student Participation. These predictors were in turn affected by three underlying subject variables: (a) Gender; (b) Academic Ability; and (3) Family Background. While gender did not seem to account for any differences in achievement, family background positively affected study habits, which in turn was seen to improve achievement. Of particular interest is that the size of the effect for student activity was twice as great as was that of study habits in positively influencing academic accomplishment.

Smith (1990) expanded on Camp's findings, noting only weak support for the traditionally regarded areas of (a) Homework Time, (b) Leisure Reading, and (c) Time with Parents. Having hypothesized that these areas positively impact on student academic accomplishment, Smith discovered that

> the failure to find a positive association between achievement and time spent with the parent -- even though achievement was positively related to parental educational encouragement -- indicates that the mere amount of exposure to the institution of the family does not promote academic achievement in children. Mere parental time and mere homework time may not be enough. (p. 555)

His results strongly suggest that time needs to be structured within each selected activity, delineating the outcomes desired and the methods to be used for achieving those outcomes.

Unfortunately, according to the Coalition Concerned with Adolescent Pregnancy (1987), students tended to engage more in

unstructured endeavors, even though it is reported that parents would rather their children participate in more structured pursuits. Hendry, Raymond and Stewart (1984) examined activities in which students spend their leisure time. These activities were grouped along a conceptual continuum from the most structured to the most unstructured use of time. Like the previous studies, Hendry et. al. found the most productive students to be those who engaged in more highly structured activities (italics added) such as job hunting, domestic responsibilities in the home, and organized sports. Window shopping and TV watching, activities not as structured, were less productive. In a similar fashion Agnew and Petersen (1989) examined the links between leisure and delinquency and found similar results with regard to the amount of structure inherent in the activity. They reported that the rate of delinquency is positively related to the amount of time spent in unsupervised social activities and activities least favored by parents. Furthermore, the incidence of delinquency is negatively related to the amount of time spent in organized leisure activities and noncompetitive sports.

These research findings detail an association between student engagement in structured activities and academic success in school. It is possible that this link is merely a correlation -- that the intrinsic traits steering students towards structured activities are the same traits that make them better scholars. It is also possible that it is a learned skill -- that students are taught successful engagement strategies through their participation in structured activities, a skill that carries over into school academics. If the latter is correct, one way that might improve students' academic performance in school is to engage students in structured activities both in and out of school.

Computer use in the schools

Ever since the technological revolution of the early 1980's, schools have been seeking ways to use new computer technology. According to a 1988 Gallup poll of America's youth (Belliza), almost fifty percent of the nation's high school students own or have access to a microcomputer. Without a doubt, computers in education are here to stay, and their impact is being felt more each year.

Educational software is found in virtually every academic department. In mathematics, the "Supposer" is used to help high school students to better visualize geometry problems and derive the basic properties of geometry on their own. When measured using the Houghton-Mifflin Modern Geometry Test and the SRA Achievement test, students using the "Supposer" software outperform those taught with traditional (non-computer) teaching methods (McCoy, 1990). In science, Barba and Merchant (1990) have used transactional software to improve student's knowledge of insect anatomy and principles of insect classification. Menis (1984) concluded that using the computer, "provides an

opportunity to develop personal curiosity and thus improve attitudes toward the sciences" (p. 32).

The hard sciences are not the only classes that benefit from computer technology in the classroom. Social Studies classes now use interactive video and multimedia (Martorella, 1991). Perhaps the most prevalent microcomputer use in schools is in the English class. Microcomputers have been successfully integrated into programs geared toward improving overall student literacy through increased parental involvement (Rickleman & Henk, 1991), in Freshman English Composition class teaching grammar and the other language arts (Bruce, 1990), and in writing labs for revising or editing works already in progress (Kurth, 1987). Microcomputer technology has also been of benefit in Foreign language instruction. Through computer networks, students gain an added richness to their classroom discussions (Bump, 1990). In one far reaching example U.S. students involved with the Kids Interactive Telecommunications Experience by Satellite (KITES) program discussed the scientific principles of nuclear power and alternative energy sources with their counterparts in sister schools in Baden-Wurtemburg, West Germany (LeBaron & Teichmann, 1989).

Programs like that of Hancock and Baugh (1991) exist so that children become computer literate early in their elementary academic years. This program focuses on teaching critical thinking and problem solving skills, using the computer as a tool for executing structured investigations. The Apple Classrooms of Tomorrow (ACOT) project takes this empowerment a step further and utilizes collaboration in the classroom establishing appropriate social interaction structure utilizing the microcomputer (Dwyer, Ringstaff, & Sandholtz, 1991). Indiana's "Buddy System" project (Quinn, 1991) and New York's "Student Computer Home Loan" program (Fernandez, 1991) advance the model one more step by extending the classroom into the student's homes.

Kinzie and Sullivan (1989) evaluated the influence of the availability of computer-delivered instruction on student motivation and subsequent achievement. They found that when the students are using computers, the students prefer to control the pace of their own learning. Other researchers (Hodes, 1984; Payne, 1986; Tierney, 1988) have also found support for an internal locus of control in students engaged in computer-aided instruction (CAI). In a study of the ACOT students, Tierney found students to be confident, enthused, and challenged regarding their computer learning experience. They engaged in more planning and revision of work than similar non-ACOT students. Most importantly, when they returned to regular classroom environments, they maintained the computer-based skills they acquired.

Across all of these studies one point becomes abundantly clear. The very act of learning to use a computer, and then using it as part of some other specified school activity, can be a well structured activity.

Can computer learning and use serve as a model for teaching structured activity engagement?

As stated previously, student engagement in structured activities, both in and out of the school, is positively related with students' successful academic achievement in school. Schools can approach student learning and use of computers as a very structured activity. What remains unknown is whether student participation in and satisfaction with school-sponsored structured computer learning activities will relate to increased student participation in other structured activities. It is possible that, if a positive relationship exists, the process of learning to use (and subsequently using) a computer could serve as a model for teaching students how to engage in other structured activities. This study investigated this issue by determining the degree of relationship between the perceived amount of engagement in and comfort with school sponsored computer use and concurrent engagement in other extra-school structured activities.

Method

Three Chicago area schools are participating in a two year effort to introduce computer technology, telecommunications, and an interdisciplinary cooperatively based approach to selected ninth and tenth grade students. Known as Project Homeroom, this effort provides each participating student with an IBM computer and modem in their home, matching computer stations and a local area network in the school, low- to no-cost telecommunications services connecting the home to the school, and application specific software. Participants are also members of the PRODIGY service, using that resource for both electronic mail and an information bank.

Several subject area teachers from each school collaborated to develop ways in which to integrate the computer and telecommunications technology into their curriculum. One school was integrating the subjects of Math (algebra), Science (biology), English, and Social Science (world cultures); another was using Math (geometry), Science (biology), English, and Social Science (geography); the third integrated Social Science (world history), English, and first year German. Although different subjects were selected, the actual methods of integration were remarkably similar. These included word processing of most papers, computer based homework assignments, and Electronic Mail (E-mail) between students and teachers and among students. Each school also implemented several "projects" that brought the different disciplines together, requiring students to work in teams using the computer and information service as major resources for problem solving. A major component of these efforts included time during classes for learning to use the computer and software applications. Students participated in summer camps sponsored by the school for this purpose, and teachers continually emphasized efficient use of the computer and applications beyond merely the minimal required to complete an assignment.

Subjects

All 241 students participating in Project Homeroom in these three districts were chosen for inclusion in this research. Participating students were chosen from approximately the middle 70th percent of students in their class based on previous academic achievement. Additionally, they had to live within a predetermined geographic area that could be accessed by the telecommunications provider. Within these constraints a group of students was randomly chosen and invited to participate in the Project.

These students represented not only a convenient sample for study (the authors are also the evaluators for the entire Project Homeroom effort in these three schools), but also one that is making a concerted and well structured effort to integrate computer technology into the curriculum. Further, these students shared the added benefit that each had access to similar computer and telecommunications technology both in school and at home, with teachers that were emphasizing mastery of computer usage for coordinated problem solving.

Instruments

Project Homeroom was implemented at the beginning of the 1991-1992 school year in each of the three schools. As could be anticipated in any new effort, quite a bit of time was spent during the first few months just getting equipment and services to function as desired. Additionally, students and teachers had to be trained in the use of the computers and the various software packages. Training emphasis tended to focus on developing proficiency in word processing, computer telecommunications, and data manipulation using both spreadsheet and database programs.

In November, 1991 a survey instrument was developed to capture impressions about the start of the Project. Included in this survey were two elements specifically designed for this research. The first element provided each student with a list of fifteen typical computer software applications. Students were asked to indicate, on a five-point semantic differential scale, both how much they used each particular application and how comfortable they felt in using that application. Two results were anticipated from this portion of the survey. First, that there would be a strong relationship between reports of how much a particular application was used and how comfortable the respondent was in using that application. Second, that not all of the applications listed would be reported as used frequently. Primary emphasis had been placed by the Project Homeroom teachers in having the students master the skills of word processing, communications, spreadsheets, and data base manipulations. Other software was reported as being available both through the school and at students homes, yet no other applications were addressed in the structured manner by the teachers.

Another portion of the same survey asked each student to indicate the number of hours spent during a typical week in certain activities. A list of activities in which adolescents engage was compiled, with twenty-four selected as being the most relevant for this respondent group. These activities included such items as: school work/home work, out-of-school employment, using their computer for other activities, watching television, and participating in an organized sport, club, or hobby. Twelve of these activities were a priori classified as unstructured, while the remaining twelve were considered primarily structured activities.

Procedure

The survey was initially distributed to students in mid-December, 1991. A follow-up distribution for non-respondents was made in mid-January, 1992. Participating teachers were used to encourage each student to complete their survey, although no coaching or set responses were made.

Results

Of the 241 surveys distributed a total of 220 (91.29%) were returned and usable for this analysis. The variables were first tested in an Analysis of Variance design for contrast between the three schools. No significant differences (at $\alpha = .05$) were uncovered, allowing analyses to proceed on the entire data set as a whole (all schools simultaneously).

Mean responses to the fifteen software applications were considered first (see Table 1).

Insert Table 1 about here

These students report using their computer most frequently for word processing (4.25), communications (3.63), computer games (3.30), graphics (3.20), and spreadsheets (3.15). Least used are accounting or financial applications (1.53) and CAD/CAM (computer aided design/computer assisted manufacturing) (1.79). Students also reported that they are most comfortable using word processing (4.38), computer games (4.02), communications (3.71), graphics (3.37), and spreadsheets (3.33), while they are least comfortable with accounting or financial (1.83) and CAD/CAM software (1.97). These results are not surprising, considering the age of the respondents and the application areas that the Project Homeroom teachers were emphasizing. As expected, there is a moderate to high correlation between reported degree of use and reported comfort level for each software application (see Table 2). These significant ($p < .001$) correlations range from .582 to .887.

Insert Table 2 about here

Responses to the twenty-four questions involving the amount of time spent during a typical week on selected activities produced a much different picture. Students indicated the number of hours they perceived they engaged in the different activities; unfortunately, there was a large amount of variation from student to student across the different activities with some students only reporting a total of 10 hours in a typical week and other reporting in excess of fifty hours. To better represent the idea of "amount of time being spent on structured, instead of unstructured, activities" a scaled score was constructed from these twenty-four items.

The total number of hours reported by each student was initially summed, then percentages of hours reported on each activity calculated. The total percentage of time spent on different unstructured activities was converted to a negative number, while the total of time spent on structured activities remained as a positive percentage. These converted subtotals were then summed, producing an overall scaled score for each student. A student with a "structured scale" score of -100 was reporting spending all of their time (regardless of the number of actual hours) in unstructured activities, while a score of +100 indicates all time spent in structured endeavors. The scaled score of zero indicates a student who perfectly balances their time between structured and unstructured activities. Table 3 presents the list of activities and the average percentile score for each.

Insert Table 3 about here

Students report spending the most amount of out-of school time doing non-computer school work at home (10.0%). Other structured activities that students report frequently engaging in are participating in a sport or exercise (7.2%) or some form of non-computer oriented employment (6.3%). Clearly, though, most out-of-school time is spent engaged in unstructured activities. Watching television leads the list (9.1%), followed by visiting with friends (8.3%) and attending a sporting event (7.2%). On the average these students reported spending about 68% of their out-of-school time on unstructured activities, with the remainder on structured endeavors (rounding error allowed). The scaled score measure bears out this finding. When averaged across all students this score is a -9, indicating that students tend to spend more of their time on unstructured pursuits.

<u>The relationship between computer use & comfort and engagement in structured activities</u>

Multiple regression analysis was used to determine the relationship between the relative amount of time spent in structured activities and a student's reported use and comfort level with different computer applications. The fifteen "use" and fifteen "comfort" scores, together with a dichotomous

variable representing the student's gender, were entered into a stepwise analysis to predict the structured scale score.

Insert Table 4 about here

Four predictor variables account for a multiple r of .415 (an R^2 17.19%). Examination of the signs of the beta weights reveals that students engaging more of their time in structured activities tend to also use telecommunications software less, feel more comfortable in using the computer for spreadsheet applications, tend more often to be male, and spend less of their time playing games on the computer. None of the other use or comfort variables reached a significant predictive level (α = .05).

Discussion

Results from this study confirm existing views on how beginning high school students spend their out-of-school time. More importantly, these results demonstrate a clear relationship between reported comfort and use of certain computer applications and engagement in structured activities. Students who feel satisfaction from their interaction with the computer are also those who spend more of their time on structured pursuits. Students most comfortable with the computer as a means for game playing or communication with friends are likely to spend more of their time on unstructured activities.

These results have important implications for all schools seeking to use computers in their educational programs. The process of learning to use computers for certain purposes can be a structured activity. This is different from a model that views using the computer as only a tool to accomplish some other end. In the latter model students would be encouraged to use the computer as quickly as possible, without necessarily learning to use it efficiently, so that the overall end might be accomplished. This could been seen when a teacher assigns a class to write a paper that must be turned in word processed yet is mostly unconcerned with the task of word processing in favor of the contents of the finished paper. The overriding goal is the paper itself, with the result being that students shortcut the computer learning process and only master the minimum of word processing skills necessary to produce their finished work.

In tne former viewpoint, however, the process of learning to use the computer serves as a model system for efficient engagement in any problem. A teacher operating from this perspective, as the Project Homeroom teachers were, would view the "how" of word processing the paper as an important component in producing the "what" that is actually written. That teacher would not only read the content of the student's final work, but would examine the process by which the student produced that work. They might even choose to examine each student's actual word processing disk file for efficiencies of use, such as using

a [Center] command for centering text on a line as opposed to using multiple spaces.

The positive relationship between structured activity engagement and student academic success makes it important for each educator to consider ways of encouraging students into more structured ventures. While learning to be an efficient computer user does take additional time for both the teacher and student, this study has shown that process to be associated with a greater participation in out of school structured activities. This suggests that the process of learning to use a computer can be important in helping students learn the skills that lead to greater academic achievement. In our age of increased attention to technological and problem-solving proficiency, this might be one more way that schools can help guide students to be the critical thinkers of tomorrow.

Contributors

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Table 1

Mean Responses to the Software Applications

How much do you use? 1=Rarely, 5=Often	Application	How comfortable are you using? 1=Hardly, 5=Very
3.30	Computer Games	4.02
4.25	Word Processing	4.38
2.55	Data Base	2.84
3.15	Spreadsheet	3.33
3.63	Communications	3.71
2.73	Math or Statistics	2.80
2.05	Calendar or Scheduling	2.31
1.53	Accounting or Financial	1.83
2.13	Computer Programming	2.29
3.20	Graphics	3.37
1.79	C.A.D. / C.A.M.	1.97
2.16	Tutorials or C.A.I.	2.45
2.47	Utilities	2.56
2.52	Integrated Packages	2.60
2.91	Other	2.94

Table 2

Correlations between degree of use and comfort in using particular software applications

Application	Correlation
Computer Games	.608
Word Processing	.582
Data Base	.785
Spreadsheet	.783
Communications	.758
Math or Statistics	.747
Calendar or Scheduling	.721
Accounting or Financial	.670
Computer Programming	.839
Graphics	.779
C.A.D./C.A.M.	.811
Tutorials or C.A.I.	.752
Utilities	.854
Integrated Packages	.887
Other	.851

Note: All correlations significant at $\alpha < .001$

Table 3

Mean percentage of time reported on twenty-four activities

Structured Activities	Mean Pct
"School" work at home (non-computer)	10.0%
Participating in a sport or exercise	7.2%
"Employment" work (non-computer)	6.3%
Doing a hobby, art or craft	3.3%
Participating in a club or group activity	2.6%
"School" work at home (with computer)	1.7%
Using the School's computer network	1.4%
Tele-Communicating with a Teacher	1.1%
Using a computer for non-school reasons	1.1%
Tele-Communicating with a Parent	0.9%
"Employment" work (with computer)	0.8%
Tele-Communicating with a School Administrator	0.3%

(continued on the next page)

Table 3, continued

Mean percentage of time reported on twenty-four activities

Unstructured Activities	Mean Pct
Watching TV	9.1%
Visiting with friends in person	8.3%
Attending a sporting event	7.2%
Talking with friends on the telephone	6.5%
Listening to records, tapes, CD's	6.4%
Listening to the Radio	6.3%
Working on PR DIGY	6.1%
Relaxing (doing nothing at all)	5.6%
Watching a move, a concert or play	3.4%
Playing games or other entertainment	3.3%
Tele-Communicating with another student	3.0%
Reading pleasure books or magazines	3.0%

Table 4

Stepwise multiple regression results

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	4	3.433	0.858
Residual	215	16.534	0.077

$F = 11.159$, $p < .00001$

Variable	B	Beta
Use communications software	-.0556	-.2572
Comfort with spreadsheets	.0434	.2150
Student's gender	.1407	.2332
Use computer games	-.0394	-.0394
(Constant)	-.1130	----

Causes Underlying Minimal Parent Involvement in the Education of their Children

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Abstract

The current study evaluated the recent literature regarding schools' attempts to involve parents in the education of their children. Chronicles programs described the diverse rationales for parent involvement and serve as testaments to the benefits available to schools, parents and students when parents are involved in their child's education. A taxonomy for classifying underlying reasons for low parental educational involvement was developed from this review. Practical experience impresses that school-parent communications are key to any intervention effort. With successful communications, parent involvement programs must be linked to the needs of both the school and the parents in order to realize the greatest benefits. It is hoped that by first identifying the causes for low parental involvement schools will be better able to target their intervention strategies.

Causes Underlying Minimal Parent Involvement in the Education of their Children

A school institutes a program that requires students to have their homework assignments initialed by their parents. The subsequent rate of completion of homework assignments increases, coupled with an increase of other academic indicators for these students. Another school faces a severe budget shortfall resulting in the elimination of many part-time positions, including classroom aides. That school responds by enacting a program to recruit and train parents as classroom helpers and tutors. Teachers work with volunteer parents to reduce student work-group size in classrooms without the need for additional expenditures. A third school exists in an area of the city troubled by youth gang activity. School personnel, community leaders, parents, and students come together in the school building at periodic meetings to discuss problems and reduce tensions. This school enjoys a continuing reduction in both student absentee rate and the rate of gang-related activity in or near the school.

All of these imaginary schools share a common image of schools successfully involving parents in the process of public education. For nearly three decades researchers have studied the various ways in which parent become involved in the education of their children. From 1966 to 1980 (Henderson, 1981), then on through the nineteen-eighties (Henderson, 1987), the plurality of research has shown that schools that engage in parent involvement programs tend to see immediate and positive results from their efforts. In fact almost no examples exist of school sponsored parent involvement programs of any nature <u>not</u> succeeding in its intended goals.

Are educators that good at crafting and executing programs that they never fail? Is the situation so needy that any kind of involvement, regardless of its nature, will produce positive results? Or does the literature just not discuss (or, perhaps, report) attempts that are less than stellar? While any of these reasons might be true a review of the research into parent involvement in public education is absolutely clear on one point. The past twenty years has shown an enormous number of different kinds and types of involvement programs in different schools all across the nation with virtually all apparently succeeding. Even accepting the position of drastic need as an explanation for the many program's successes, these reports demonstrate that educators continue to "re-invent the wheel" each time they considering increasing the level of parent involvement.

This paper reports the results of an investigation into the status of parent involvement programs, asking the critical question of why so many different - yet all apparently successful - programs exist. We begin by examining several of the rationales given in the literature for school's to engage in parent involvement programs. Many programs mention not only the results of their particular efforts but also the orientations of the professionals in the schools towards their student's

parent(s). A synthesis of this literature has led us to the development of a taxonomy of potential reasons for parent low-to-non involvement in public education. It will be our contention that schools need to develop a better understanding of the needs and situations (both social and economic) of their student's parents before developing programs to increase their education participation. It is through such an increased understanding that we believe parent involvement programs can become more focused. It is also our contention that, from recent experiences in three Chicago-area high schools, communications between the school and parents is the key to undertaking any parent involvement improvement program. These schools all demonstrated that parent involvement increases begin with the school reaching out to, and talking with, parents on a more frequent and effective basis.

Parent involvement programs

As mentioned previously one kind of parent involvement occurs when a school institutes a program that requires parents to review their child's homework. Another kind of involvement takes place when a school invites parents to participate as volunteer classroom helpers. Both programs can be successful in achieving their different goals. Yet both programs make very different assumptions about the role of the school, the role of the parent, and appropriate ways for the two to interact. Understanding the issue of parent involvement, therefore, is not merely a matter of comprehending the simple intended and achieved results. One must also understand the roles of the school, student, and parent and ways in which the involvement program seeks to improve a particular relationship.

As an example the first situation described above is aimed primarily at improving the relationship between the parent and child. At the very minimum a parent engaged in this intervention will interact more frequently with their child regarding homework and school. In the second scenario not only is the parent-child relationship improved, but also improved are the relationships between parents and schools. Henderson, expanding on Ira Gordon and William Breivogel (1976), classified these types of parent involvement programs as: (1) attempts to improve the parent-child relationship, (2) attempts to integrate parents into the school program, and (3) attempts to build a strong relationship between the school, family and larger community. These major themes, and others to be discussed, each contribute to the make-up of every particular parent involvement initiative.

Programs to improve student academic performance

One factor underlying an increase in student achievement is the level of importance parents put upon education (Hart, 1988). Hart found that involving parents leads to increased academic achievement for students at all educational and economic levels. It was found that children of low socioeconomic status (SES) tend to score below average regardless the level of parent involvement with education across SES levels. All children, however,

regardless of their SES, benefit academically from increased parent involvement (Benson, 1984). Low SES children consistently tend to score lower than high SES children on tests of academic achievement. When parents become actively involved in their child's education, the improvement in the student academically is more dramatic for the low SES child even though that child will still tend to test lower than their higher SES counterparts.

Eagle (1989) found that parent involvement during high school was solely responsible for increased achievement once social background factors were controlled. Eagle examined the data for the 1980 cohort of high school seniors in the High School and Beyond data set. Her primary interest was in determining the exact influence of the home environment on achievement and on enrollment in and completion of post-secondary education as predicted by the National Center for Education Statistics SES composite score. The composite was made up of five different variables: (1) mother's education, (2) father's education, (3) family income, (4) father's occupational status, and (5) the number of certain types of possessions found in the student's home. Additionally, five measures of home environment were examined. These measures were: (1) composition of the household, (2) parental involvement during high school, (3) parents' reading to the student during early childhood, (4) patterns of mothers' employment, and (5) having a special place in the household for the student to study. In a multivariate analysis all effects except parental involvement exhibited non-statistically significant contribution to increased educational attainment. Like Hart, there was more than sufficient evidence to suggest an interaction between parental involvement, the various measures of SES and home environment, and academic achievement.

Coleman & Hoffer (1987) examined the relationships between schools and parents as it related to the disparity in student achievement as found in private, Catholic, and public high schools. Coleman & Hoffer asserted that the apparent differences in ability between public schools and private high schools may be due to selection on the part of the private school. Private schools have the ability to select an academically superior student body while the public schools cannot. However, Coleman & Hoffer found that Catholic high schools turn out students that are academically equal to if not superior to the private schools. From the data collected in their study they postulated that the success of the Catholic schools was due to their strong community ties and the willingness of their parents to become involved with their children's educations.

Dornbusch's 1986 study detailed three distinct parenting styles: (1) Authoritarian, (2) Permissive, and (3) Authoritative. The authoritarian style is characterized by rigid discipline and decidedly one-way communications with only the parent's views being represented. Permissive parenting is typified by a parent with a laissez faire attitude. In this style, parents offer little guidance or goal setting and virtually no limitations on the child's behavior. In the third style, the Authoritative

parent sets and enforces limits on the child's behavior, defines expectations for success in school, and is open to feedback from the child. This style of parenting is not necessarily compromising, but rather allows for a two-way dialogue between parent and child.

Beyond the impact of parental style's on the student's decision to stay in school, Dornbusch found that the authoritarian and permissive orientation were related to lower student grade point averages while the authoritative style was related to higher G.P.As. This research reinforces the importance of the parent-child relationship (as evidenced by parenting style), and the home school link (as evidenced by the level of parental involvement).

Programs to increase student attendance

Another benefit reported from involving parents is increased student rates of attendance. A program at one Iowa school involved parents by asking them to help verify their child's attendance (Kube & Ratigan, 1991). An old school policy forgave absences that were later justified by parents. This policy had led to mountainous administrative tangles and recidivism. Under a new school policy students were allowed only ten absences from each class per semester. Parents were required to verify each of their child's absences. In addition parents were informed of all absences and all absences were counted toward the ten per class per semester limit, regardless of whether they were later justified by the parents. In this way parents were held responsible for the attendance practices of their children. In the first year absences decreased by 65% and truancies by 78%.

Programs to decrease at-risk behaviors

Parent involvement has also been linked to reducing the drop-out rate of high school students. Rumberger, Ghatak, Poulos, Ritter, and Dornbusch (1990) identified several parent involvement factors explaining students' drop-out decisions. Their research surveyed 114 tenth, eleventh and twelfth grade students at one California high school. These 114 students had been coded as drop-outs by their school on the California Basic Educational System (CBEDS) form. Students in the drop-out sample were matched on basic demographic data to similar students continuing in school. The study found that several parenting practices were positively correlated with the student's decision to drop out of school: (1) permissive parenting, (2) negative parental reactions to grades, (3) excessive adolescent autonomy, and (4) low [overall] parental involvement.

Schools have also involved parents in attempts to curb the incidence of drug and alcohol abuse. Klitzner (1990) conducted a large scale descriptive study of ten parent-led programs aimed at reducing drug and alcohol use. Factors such as the history of parent groups, structure and activities, the roles of group participants, and the perceptions of parents, youth, and community leaders regarding group effectiveness were all studied.

At the time of this research (1990) parent led groups were infrequent, typically involving only a handful of parents. In the communities where such groups arise, though, they are reported to be largely supported and frequently effective.

Programs aimed at decreasing operating costs

Involving parents in the process of public education can also lead to direct economic savings for the school. Schools may recover untold costs in remediation by utilizing available parents as aides and tutors instead of hiring paid personnel. This can free limited resources for use in other programs and improvements otherwise restricted by available assets.

Dorothy Rich (1986) outlined the initiatives advocated by the Home and School Institute for involving parents at school. Among them, Rich calls for the need to assign educational responsibilities to parents as well as providing training to teachers so that they are better equipped to utilize parents and work with families. These initiatives, undertaken in different forms by many schools nationwide, involve parents in the education of child -- both their own and others -- while allowing the school significant economic savings.

Involving non or low-English speaking families

Gifted, disadvantaged children of both Anglo and Hispanic parents have benefitted from a summer institute focusing on a differentiated parent education curriculum (Strom, Johnson, & Strom, 1990). Because the gifted children of disadvantaged families are typically under-represented in research, Strom et al selected specifically for gifted childrem from both Anglo and Hispanic disadvantaged families. The researchers then used parents' scores on the Parent as a Teacher Inventory (PAAT) to construct individual parent education plans. These plans focused on helping parents to improve in such areas as: (1) arranging for solitary play-time, (2) teaching decision making skills and allowing students to practice making individual decisions, and (3) developing a respectful attitude toward child participation in conversations with adults.

Lucas, Henze, and Donato (1990), cite several key features found to be effective at aiding the language minority student. Encouraging parents to emphasize education at home was often cited. Several ways to encourage parents ranged from hiring staff who could speak the parent's language and sponsoring on-campus ESL classes to early morning meetings and telephone contacts between parents and counselors. Numerous such efforts have been cited as successful in reducing the number of language minority drop-outs at the schools where the interventions were attempted (Pell & Ramirez, 1990).

Many kinds of programs

The literature is replete with programs that have been very effective at increasing parental involvement with schools. In

Tennessee, Donald Lueder (1989) implemented a family math program to help parents and students develop problem solving skills. Harlene Galen (1991) details a program to involve parents from such low levels as no involvement to a high end result of parents helping in the classroom, trained by the teacher. This continuum of increasing involvement is accomplished through the teacher inviting progressive levels of involvement from parents, guiding and nurturing that involvement.

Interventions as straight-forward as a parent-school contract (Kennedy, 1991) have been used to increase parent attendance at parent teacher conferences as well as guaranteeing parent instruction in and use of microcomputers. Such an educational contract has also been used to facilitate parent involvement in lieu of lengthening the school day (Bouie, 1987). The immediate effects of Bouie's program was that student study time increased as well as having parents role modelling high educational expectations. Parents in one Kansas high school are now tutoring students, sponsoring orientations, coordinating college clinics, compiling reading lists, and arranging for guest speakers, because of an innovative program to involve parents as partners (Sandfort, 1987).

The prior research is convincing that schools are improving student performance by involving parents in a myriad of ways. Social contracts, attendance monitoring, parent-teacher meetings, in class and at home tutoring, and programs to help better educate parents are all ways in which schools are reaching out to parents. Parents, for the most part, genuinely appear eager to help with their child's education. The above mentioned programs, and others like them, are a testament to the successes possible for the schools who are willing to make the attempt to reach out to parents.

It is obvious that schools can and have succeeded in getting parents involved. So why is it that after close to three decades schools are still searching for ways to make long-term connections with their students' parents?

Why is there still a problem?

Though a multitude of intervention strategies purport to increase parent involvement in schools, it is doubtful that every intervention is as effective in each situation as the program planners might want. If this were the case then one streamlined intervention program, or some finite number of programs, would have become known as "the programs that work in this kind of setting". These programs would have been established and communicated to schools to meet most every possible parent involvement situation. If it were the case that all interventions are effective all of the time, the incidence of parent involvement research articles should have decreased over the years instead of increasing.

Unfortunately we know that the majority of parent involvement interventions have been increasing over the last few

years. A change in public attitude toward the school, coupled with an increasing desire on the part of professional educators to involve parents in educational functions, contributes to this change. Most of the interventions, though, have been attempted at the pre-school (Bronfenbrenner, 1985) and early elementary grade levels (Brandt, 1989). Fewer studies have been reported at the junior and senior high school levels. What research there is, however, is convincing that parent involvement at all levels of schooling can lead to positive outcomes for the child, the parent, and the school.

We believe that parent involvement is important and effective at all levels of schooling. Furthermore, it is clear from prior studies that parents are involved in different ways and for different purposes as their children mature and move through our public education system. In the early years, parents' involvement with schools takes the form of field trip monitors, bake sale participants, at-home tutors and, increasingly, in-class teacher's aide. During junior high and high school, parental emphasis shifts toward the role of advisor, confidant, and administrator as adolescents seek autonomy and begin to plan for a life on their own.

The large number of different programs found throughout the literature would suggest that not every parent is as involved with their child's education as the schools would want them to be. Teachers would not still complain of the difficulties of getting parents to attend conferences, check homework, or answer notes if parents were that involved. Gay Eastman (1988) relates the story of one failed program, where the failure to involve parents seemed to be linked to the parents not being seen as partners with the school in general and with the teachers in particular. Eastman emphasizes the importance of conceiving the parent as a complement to the teacher and not an adversary, as is often the case. The perceptions each player has of the others' roles (i.e. parents, teachers, administrators, and students) would seem to be of primary importance. One key to gaining a parent's involvement would be to reinforce in parents their own importance to the student and to the school.

Even presuming that most parents are genuinely interested in the education of their children, it is true that some parents will still be relatively uninvolved with the school. The question then is, "Why isn't this parent involved? Patricia Clark Brown (1989) lists the following possible reasons for low parent involvement:

(1) lack of time - working parents are often unable to attend school events during the day.

(2) feelings of inadequacy - for many parents school was not a positive experience, they may feel they do not posses the skills to help.

(3) overstepping their bounds - confident parents may feel they should not "interfere" with the school's business (p. 3).

Albert Holliday (1986) reiterates and expands upon this list, adding:

(1) school's organizational structure does not lend itself to sustained parent teacher contact.

(2) adolescents are increasingly independent and may resist when parents attempt to become involved (p. 7).

It appears that there are abundant benefits to be gained for schools by seeking to involve the parents of their students. It is reasonable to assume that schools will want to make attempts at securing those benefits. Our review and synthesis of the literature base convinces use that schools must seek to match their intervention strategies to the needs of the parents in their district. By "targeting" their interventions, schools will use the programs that are the most effective at addressing the needs of the parents at whom they are aimed. Furthermore, before it is possible to "target" an intervention to a need, we must first understand the needs. Analysis of the previous research provides distinct indications of reasons why parents are not involved, or involved only slightly, in their children's education. Schools conversant with the reasons underlying low parent involvement can, we feel, better design and target their planned interventions.

Potential reasons for low parental involvement

"No prior involvement"

Parents operating from this perspective were previously rarely involved in their student's education. They feel that since they have never really had much contact with the school or their child's teacher(s) they really don't need to be involved now or at any time in the future. The parent may perceive their role as parent as not having anything to do with the formal education of their child. Interventions to involve these parents more would focus on improving the home-school relationship. Such interventions would focus on establishing a dialogue between the school as an entity and the parent to explore each players expectations of the other.

"My Kid is OK"

Under this model the parent believes that their child is doing fine in school and further involvement on the part of the parent is not needed. This case may be typified by the child who has all A's with the exception of a low or failing grade in one course. The parent minimizes the importance of the one low grade under the assumption that the child has always been a good student and that this is undoubtedly an aberrant occurrence. Once again, as in the previous reason, there is a

miscommunication between home and school as to what each expects of the other.

"Adolescent seeking self"

Here the parent feels that their involvement is unwanted by the student. The parent rationalizes that the student is going through a developmental phase and shuns parents' opinions. Such a parent might comment, "My input would be worthless since Joey ignores me anyway." This rationale is most prevalent in junior and senior high school and is meant to reference the change in the parent-student relationship that comes with the onset of adolescence, a striving for independence and individual identity. Patricia Clark Brown (1989) postulated a similar rationale. In order to be of service to both parent and student, interventions by the school might focus on improving the parent-child relationship through guided relationship building exercises.

"Parent abdicates responsibility"

The parent feels it is the school's job to educate their child and refuses to take on any of that responsibility. The parent remains uninvolved and out of touch with their child's educational process. Sandfort (1987) refers to this reason as "turn over" psychology and emphasizes the need for parents to once again "own" responsibility for their children's educations. This reasoning is probably better known as the "logic of confidence" argument. This argument posits that teachers are performing competently and do not require close supervision (Meyer & Rowan, 1977). Central to the "logic of confidence" argument is what Meyer & Rowan (1978) call the myth of professionalism. This is the notion that teachers can be expected to adhere to professional standards of performance and conduct because they hold appropriate degrees and certificates. School interventions to reach abdicating parents might include inviting parents into the classroom as observers.

"Single subject classes"

In high school, unlike elementary school, the child has several subjects and several different teachers. The changing of classes and teachers insures that there is no single identifiable contact person with whom a parent can build a "school" relationship. The "theme" of the teacher as a whole is reduced. For better or worse teachers become the subjects they teach. A similar rationale has been postulated by Holliday (1986). Further, Ziegler (1987) adds:

> Because of the rotary system and subject specializations, it is much more difficult for parents to know their children's teachers, and also to feel competent to help older children with their work (p. 31).

Schools striving to reach parents should encourage teachers to contact parents more frequently either in person or telephonically. Also, school counsellors could be utilized as a

contact person for parents to call with questions regarding their child. The counselor could then coordinate with the child's teacher(s) to provide parents the answers they need.

"The 'New Math'"

Zieqler's previous quotation inspires this reasoning as well. Here parents feel that the work the student is doing is beyond their personal expertise. Parents feel that they must be the expert in each subject. When they discover that they are not, they lose confidence in their ability to help. The research plainly shows, however, that parents' understanding of the work is not as important to student achievement as their willingness to try and help. Schools attempting to reach these parents could institute "refresher" parent education courses. These courses could emphasize the importance of the parent helping the child solve problems and helping to find the answers. The major intervention a school could make would be to help the parent(s) realize that they need not be able to do the child's course-work. Schools can make parents facilitators to education regardless of whether the parent is ready or willing to be a deliverer of education.

"Hands off"

In this rationale parents perceive the school sending the message that parents do not understand educational practices, and therefore parents should not attempt to educate their children personally. Given the message that they are unqualified to help, parents avoid becoming involved in the education of their student. This case is most clearly evident in the failed intervention described by Eastman (1988). Accordingly, schools should nurture the role of parents as partners, complementing the teacher in the classroom, instead of parents as adversaries.

"Parents have no time (other jobs/odd hours)"

The parent who reports that they have no time to dedicate to being involved with their child's education often works many hours per week or is otherwise not available when the child is available. This rationale often underlies the inability of some parents to attend scheduled meetings with teachers or other school related functions. There is literally "no time". In order to reach this parent schools should look at the times they are offering parents to interact with it. Scheduling times other than the traditional "after-school" slot for parent meetings could possibly help parents who have little time.

"Parents have no time (elects other activities)"

This rationale is similar to the prior designation in that the parent(s) again report that they do not have time to devote to being involved with the school and/or their child's education. Unlike the parent who is working to maintain family basic needs these parent elect to engage in other activities such as clubs or simply relaxing at home rather than working with their children.

Schools should understand that there are parents whose attitudes will not be changed. If increased attempts to meet with parents, educate parents as facilitators, and generally bring parents in as partners in the children's education fail, then schools should look into providing extra educational support for the children.

"A negative parental attitude"

In some cases parents have been turned off to school for some reason. They undervalue education and do not place importance in its attainment. For example, the parent who was never very successful in school, or for whom school was a traumatic experience, might fit into this rationale for low involvement. The parent with this attitude is clearly not sending a positive message to the child concerning the importance of education. Such an attitude is contradictory to Eagle (1989), Hart (1988), and several other theorists who state that parental emphasis on education is necessary for increased student achievement. While schools cannot change a parent's past experience, Schools may be able to change current opinions by inviting parents into the school: (1) to observe classes, (2) for special programs and presentations, and (3) to provide input to the school regarding the types of classes and experiences parents would like their children to have.

Communications is the Key

Regardless of the reason (or reasons) for low parental involvement one point remains consistent and clear throughout the literature. The first step in any parent involvement program must involve the school reaching out to the parent. The exact ways and means of the involvement must vary according to the situation of the school and the parents, but all programs must begin with the simple act of communicating. Without the ability to talk with the parent, school programs cannot succeed.

This point was made abundantly clear in an ongoing piece of research in which we are both involved. Called Project Homeroom, this effort involves three Chicago-area high schools, IBM, and Ameritech. Selected students from each school received IBM personal computers and separate telephone lines for the purpose of communicating with their teachers. These students were organized into a common group with several teachers given responsibility for their core subject education. Computer and telecommunications equipment was placed in the schools, and also into the teachers homes. In addition to specialized instructional software the project participants were given access to the Prodigy Information Service, to be used for both information access and electronic mail.

An early emphasis of Project Homeroom was to increase the involvement of participating student's parents. Parents were brought into the school early in the development of the program to explain components of the project. Special training sessions were also held at each of the schools to instruct the parents on the use of Prodigy and electronic mail. It was the plan of each

school to have teachers routinely communicating with both students and parents through this electronic mail service.

As with any new enterprise complications and problems arose during the first year of implementation (1991-92). Telecommunications and computer difficulties prevented all schools from coming "on line" right at the start of the year. Many parents had to be coaxed into using the computer technology, with some never actually using it throughout the year. Many of the participating teachers reported using regular voice telephone conversations as an augment to the electronic mail.

By the end of the first year, however, interviews with both the teachers and parents described a large increase in the number of school-parent interactions as compared to the start of the year. Parents knew more of what their child was doing in school, were more cognizant of their successes and difficulties, and were more comfortable in approaching and speaking with their child's teacher. In a meeting held later in the year several parents complained that "the teachers were not as accessible [as they thought they should be]", even though these same parents reporting conversing (through electronic mail or by voice) with their child's teachers an average of three to five times each week.

Teachers, for their part, had to change their view that school is "only an 8 to 3" proposition. They established regular hours outside of the school day to check their electronic mail and to respond, by regular voice telephone when necessary, to parent questions or concerns. One teacher reported having to finally "unplug the telephone" after parent calls continued into the evening well past any reasonable hour. Other teachers used a combination of electronic mail and voice answering machines to keep up with the flood of parental interest.

While all schools will not be able to implement a computer messaging program as accomplished in Project Homeroom the missive from its results are clear. Parent involvement begins with school-parent communication. When a school is able to find ways that increase the likelihood of parents and teachers talking those parents and teachers will converse with each other. Programs targeted at specific parental needs and desires can then be planned and established.

Conclusion

In 1981, Henderson came to the conclusion, "The form of parent involvement does not seem to be critical, so long as it is reasonably well-planned, comprehensive, and long-lasting (p.7)." Eleven years later it would seem that Henderson's argument still holds up quite well. It should be amended, however, to say that the form of the involvement does indeed seem to be critical. In order to involve the maximum number of parents in the education of their children, schools must understand the personal needs of those parents. Schools cannot understand their students' parents unless they are in two-way communication with those parents.

Once teachers and students are really talking, schools must then plan their interventions and programs to focus on parental needs. We believe that we will begin to see fewer parent involvement programs reported once schools begin to undertake this approach. Further, the programs that will be reported will, we believe, show a greater success in terms of the number of parents they reach and keep involved with the school.

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