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COMPUTER TRAINING COURSE AT THE WORCESTER YOUTH CENTER

An Interactive Qualifying Project Report

submitted to the Faculty

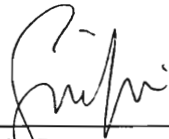
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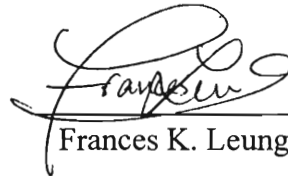
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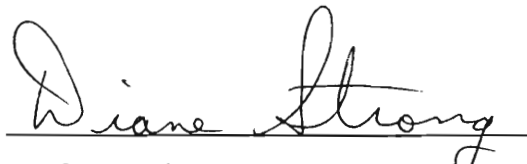
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Date: May 6, 1999

Approved:



Professor Diane Strong, Major Advisor

Abstact

This project investigated computer training opportunities in the Worcester Youth Center, with collaboration of the UMass/Memorial Health Center. In particular, we studied computer training of their high-risk youth population. This study involved planning, designing and teaching computer skills to grade-schoolers in the youth center. We utilized their feedback to propose how future computer training programs in the center could run to maximize their success. The teaching portion of this project proved that achievable assignments, personal and interactive teaching, and smaller and redundant steps were extremely effective in teaching a high-risk youth population.

Acknowledgments

This project would not have been possible without the support and contribution of many people. Our group would like to express our gratitude to the following people for their professional advice and continuous support in this project:

Professor Diane Strong, our project advisor

Cathy Recht, Vice-president of the UMass Memorial Hospital

Adolfo Arrastia, the executive director of the Worcester Youth Center

John Carnegie, the trustee of the Worcester Youth Center

The Peer Leader Group of Worcester Youth Center

Janet, librarian of UMass Memorial Hospital

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Professor Judith Miller, the director of the Center for the Educational Development in
WPI

Susan Gionet, the on-line service coordinator of Matheson Apartments

Our eyes are brightened by the works and contributions that the above people give to the society. Through their restless effort and commitment to the city of Worcester, Worcester has become a better place to live.



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April 26, 1993

To whom it may concern,

Frances Leung and Raymond Lam worked at the Worcester Youth Center this year to fulfill the requirements of their IQP. They were a pleasure to work with. Both students were energetic in their approach toward the work required, including the research about the center itself.

They completed their work at the center on schedule and continued to stay involved after completion of their assignment.

Thank you for the opportunity to work with these 2 dynamic students.

Sincerely,

A handwritten signature in black ink that reads "Cathy Kahn Recht". The signature is written in a cursive, flowing style.

Cathy Kahn Recht, RN
Vice President, Community Relations

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Introduction

As students in the nation's third oldest technological university, our students take for granted the opportunity for education and the role of computers in our lives. Everyday, we send and receive emails, do homework with computers, and even shop using the Internet! Computers have truly become part of our lives and have changed the way we live. However, is this also true for the people in the grocery store? Do they know how to use computers? Or do they even think about learning to use them?

Computer education is a very broad subject. It ranges from learning how to use the Internet to conventional programming and computer theory courses. It can focus on hardware or software. Our team defines computer education as any education that can equip one with the knowledge of computers. We believe that computer education should be available to everyone, and that computer literacy is necessary for the next millennium.

The opportunity to do an IQP on this topic came through the UMass/Memorial Health Center. The Vice President of Community Relations at the UMass/Memorial Health Center is also a trustee of the Worcester Youth Center. This topic was the result of several meetings with the youth center and the trustee.

High-Risk Students

High-risk students are those in danger of failing to complete their education with the skills necessary to survive in a modern technological society (Slavin, Karweit, & Madden, 1989). According to research by Vito & Connell in 1988, some characteristics of these students are:

| Background Variables | |
|--|--|
| Low Socioeconomic status | Minority |
| Inner city | English as a second language |
| Male | Divorced families |
| Transience | |
| Educational Problems | |
| High drop-out rate | High rates of drug use |
| Lower grades | Management problems |
| Retention in grade | Low self-esteem |
| Low achievement | High criminal activity rates |
| Less involvement in extracurricular activities | Low test scores |
| Low motivation | Dissatisfaction with, and disinterest in, school |
| Poor attendance | High suspension rates |

Table 1 Characteristics of high-risk youth

Source: Vito, R., & Connell, J. (1988, April). "A longitudinal study of at-risk high school students".

The population of the Worcester Youth Center matches many of these characteristics (see Literature Review - Worcester Youth Center). These characteristics helped us to foresee the many challenges we would have while we were instructing students at the youth center.

Project Goal

This project focused on high-risk youth because the center had a high population of them (“Memorial”, 1994). This topic was a good choice for an IQP because it involved both investigations of a social need as well as addressing this need through our service to the youth center. As part of our project, we investigated how our society was contributing to the education of the high-risk youth population about computers. Our project goals included:

- To provide basic computer skills to the high-risk youth.
- To encourage them to join the computer industry.
- To learn how to communicate effectively with people outside our own discipline.
- To serve the local community.
- To study the level of current societal involvement in fundamental computer education of the high-risk youth.

We conducted this project because we wanted to help the youth center to determine the logistics of a computer course that would be suitable for them. We believed that our result would be interesting and beneficial to ourselves, the staff in the Worcester Youth Center, and the youth involved. We hoped that our results could be used as an initial evaluation and future model for running a computer course in the youth center.

General Project Procedure

Our general approach was to teach the computer course in a career-oriented manner with strong emphasis on career opportunities in each skill. We would use, as appropriate, visual aids and multimedia in delivering the course. We would also conduct a study of the social issue of computer education for the high-risk youth. We would use the Internet, a means of demonstrating how computers are changing our lives, even in researching a project, as well as the libraries at WPI and UMass/Memorial.

We hoped that through this project, we could arouse our clients' interest in computers and hopefully, call for the attention of the local community to educate and help the youth contribute to society. Moreover, it would be a good opportunity for us to give our technical knowledge to the society in order to fit its needs.

Literature Review

Worcester Youth Center

History

The Teen Action Group / Worcester Youth Center was established in 1994, after an incident that occurred in 1991 in front of the City Hall in which 33 young people were arrested for loitering (Memorial, 1994). This event exposed the problem that there was not a safe place for young people in Worcester.

After several meetings at the City Hall, the Teen Action Group concluded their own mission statement for themselves and the Worcester Youth Center. When the center was first opened in 1994, the original site was 530 Main Street. Due to opposition from the neighborhood, the youth center was moved to its current address at 27 Chandler Street.

Goals

The goals of the Worcester Youth Center can be best summarized by its mission statement:

"To create a Teen Center that is an educational, recreational and social facility for all teens. A place where we are empowered and allowed to grow in all aspects of our lives. Resources and opportunities will be available to help us realize our full potential, to sharpen our skills and enable us to become vital, responsible and contributing members of society. The power of working at the Youth Center will be used to better the lives of our families, friends and community so that we may

grow in an environment of respect, integrity and justice. We will support activities for social justice and concentrate our efforts to create change in our community which will benefit everyone."

Population

Currently, about 100 young people aged 14 to 22 use the youth center everyday, and about 20 to 25 youth volunteers run the youth center. The population distribution in the Worcester Youth Center is not very diversified: 85% are Latinos, 92% are high school dropouts and 93% come from families below the poverty level ("Memorial", 1994). English is a second language for most of the members.

Activities

The center provides a variety of services to youth including on site health care, GED/ESL preparation, substance abuse education and assistance, HIV information, counseling and testing, violence prevention programs, a job preparedness and skills training program, computer club, music program and peer leadership training. All programs provided are prevention focused and serve the population of Worcester's highest risk youth, many who are not connected to other agencies in the community including the public schools.

School Dropout

High School Completion and Dropout Rate

According to the article "High School Completion Rates" published in 1996, the high school completion rate has increased steadily from 84.5% in 1988 to 86.2% in 1996 (Table 2). However, high school dropout rate is still one of the major social problems in the US. The high school dropout rate can be studied based on different factors, such as, race, income and geographical regions.

| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total | 84.5 | 84.7 | 85.6 | 84.9 | 86.4 | 86.2 | 85.8 | 85.3 | 86.2 |
| White | 88.7 | 89.0 | 89.6 | 89.4 | 90.7 | 90.1 | 90.7 | 89.8 | 91.5 |
| Black | 80.9 | 81.9 | 83.2 | 82.5 | 82.0 | 81.9 | 83.3 | 84.5 | 83.0 |
| Hispanic | 58.2 | 59.4 | 59.1 | 56.5 | 62.1 | 64.4 | 61.8 | 62.8 | 61.9 |

Table 2 High School Completion Rate by Race Ethnicity

Source: "A Report on the Issues of the Worcester Area Latino Community"

Latino Students in Worcester

Focusing on different ethnic groups, this problem is serious within the Latino population. According to the data provided by the Worcester Public School, the number of dropping out Latino high school students in Worcester has increased from 156 or 37.6%, in 1994 to 171 or 44.0%, in 1996 (Table 3). Since the Latinos are one of the major populations in Worcester, the problem of Latinos dropping out of school becomes more obvious.

| School Year | Total | Native American | African American | Asian | Latino | Caucasians |
|-------------|-------|-----------------|------------------|-------|--------|------------|
| 1994-1995 | 416 | 0.6% | 9.3% | 6.1% | 37.6% | 46.4% |
| 1995-1996 | 415 | 0.6% | 9.6% | 3.2% | 39.8% | 46.8% |
| 1996-1997 | 398 | 0.6% | 7.9% | 6.0% | 44.0% | 41.5% |

Table 3 Dropout for All Ethnic Groups Between 1994 and 1997

Source: Worcester Public School

Based on "Step to the Future -- A Report on the Issues of the Worcester Area Latino Community" (Velazquez, 1998), 25% of the elementary and secondary school population among the student population of 23,728 in Worcester is Latino, compared to 10% in the entire state of Massachusetts. While Latinos are the second largest ethnic group enrolled in high school, they are also the second largest ethnic group of student dropouts. In the 1996/97 school year, the Latino students who dropped out exceeded the number of dropping out Caucasian students for the first time (Table 3).

There is not a significant amount of Latinos involved in the higher education in Worcester. Among the 10 local higher education institutions, Quinsigamond Community College has the highest Latino population but that is still only 7.41% of the entire student body. The affordability and the availability of classes at night are significant reasons, provided by college officials, for many students selecting the community colleges. In addition, no special prerequisites are required while applying for classes in community colleges. Take Quinsigamond Community College as an example, students without a high school diploma or GED can also take courses, except for certificate or degree programs, after taking the assessment test.

A lack of cultural and language identification for the Latino students is suggested as the main issue of the high Latino students dropout rate. While English is their second language, difficulty in communications becomes the major learning barrier. Because of that, Latino teaching staffs are helpful for them in bilingual education programs or as school counselors. Unfortunately, the ethnic breakdown of the instructional staff (Table

4) shows that the Latino professional staffs are under represented given the proportion of Latino students in the school system and in the general population. While 25% of students in Worcester are Latinos, only 109 out of 1753 or 6.3% of the teaching staff employed by the Worcester Public School (WPS) are Latinos. The WPS tries to address this issue by recruiting from Puerto Rico and other areas with a high concentration of Latino educators.

| INSTRUCTIONAL | #LATINO STAFF | TOTAL STAFF | %LATINO |
|-------------------------|----------------------|--------------------|----------------|
| Elementary | 6 | 766 | 0.8% |
| Foreign Language | 5 | 44 | 11.3% |
| Health Teachers | 2 | 29 | 6.8% |
| Math | 2 | 79 | 2.5% |
| Music | 2 | 49 | 4.0% |
| Social Studies/ History | 2 | 78 | 2.5% |
| Science | 3 | 78 | 3.8% |
| Physical Education | 1 | 53 | 1.8% |
| Guidance Counselors | 7 | 48 | 14.2% |
| School Psychologists | 1 | 24 | 4.0% |
| Adjustment Counselors | 9 | 44 | 20.0% |
| Special Education | 11 | 374 | 2.9% |
| Other | 1 | 16 | 6.2% |
| Bilingual Education | 57 | 71 | 80.0% |
| Total | 109 | 1753 | 6.3% |

Table 4 Ratio of Instructional Staff by Ethnic Group

Source: "A Report on the Issues of the Worcester Area Latino Community"

To encourage students to participate in school, many other programs are held for dropouts. Locally in Worcester, there are some incentive programs for Latinos: Hispanic Striving for Excellence (HSE) is an academic program to encourage Latino youth to focus on education; Worcester Latino Dollars for Scholars is an organization that awards scholarships to Latino students. Besides the government, other organizations in the community also have some programs to help this group of students. The Worcester Youth

Center, which is one of the examples, places much emphasis on educating these young people and offers programs like the GED and the Job Development Program.

Other Method of High School Completion

In the US, there are several different ways to complete the high school education. Besides graduating from high school, the number of people completing high school qualifications through alternative approaches like the GED program is also increasing from 4.2% in 1988 to 9.8% in 1996 (Table 5). Therefore, the government has to expand its educational programs out of public high school.

| YEAR | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total | 84.5 | 84.7 | 85.6 | 84.9 | 86.4 | 86.2 | 85.8 | 85.3 | 86.2 |
| Graduated | 80.3 | 80.5 | 80.6 | 80.7 | 81.2 | 81.2 | 78.8 | 77.5 | 76.4 |
| Alternative | 4.2 | 4.2 | 4.9 | 4.2 | 5.2 | 4.9 | 7.0 | 7.7 | 9.8 |

Table 5 High School Completion Rate by Different Method

Source: "A Report on the Issues of the Worcester Area Latino Community"

Impact on labor-intensive job opportunities due to computer automation

Because the job nature has been changed due to the computer automation, a higher education is required. In recent years, technological advances in the workplace have increased. The demand for skilled labor is at the point where a high school education is becoming a minimum requirement for entry to the labor force. The completion of a high school education is even more essential, whether as a basis for entry into additional education and training or as an entry into the labor force. As a result, people without completing the high school education would have difficulties while finding a job. Low educational attainment may continue to be a factor in the unemployment rate.

A male high school dropout will earn a quarter of a million dollars less over a lifetime than a high school graduate. The dropouts from a single graduating class in one urban school district lost an estimated \$200 billion in earnings over a lifetime, resulting more than \$60 billion in lost tax revenues (Catterall & Cota-Robles, 1988).

The key word, computer automation, is defined as taking a task that is done and doing the same task automatically with the computer (Sichel, 1997). Due to the computer automation, companies would link their employment requirement to the information technology. Most of these changes affect those support staff positions. Basically, low-skilled clerical jobs have disappeared while remaining support staff positions have become more challenging. Some companies even indicated that they have half as many secretaries as five years ago.

In recent years, most of the companies indicated that a shift has occurred in the types of tasks and processes that have been the focus of new information technology efforts (Sichel, 1997). This shift was described as a change from automating tasks that they were already did to doing completely new things with information technology. Companies were looking for what could be done more efficiently with computer. Also, they started to use technology to increase margins and revenues instead of merely focusing on the cost reduction. While more tasks are computer-automated, the nature of different job opportunities will be changed. Therefore, a higher education is necessary for any type of job.

General Computer Education

Since the number of computer training opportunities is increasing in the community, the necessity of learning computer skills has been noticed. Not only the government spending on different computer education programs keeps increasing, but also many computer training centers were established within the past few years. Different training programs were designed for people with different backgrounds. In addition to the different materials taught in these courses, the teaching methods have been adjusted according to different backgrounds as well.

In the fiscal year 1994, the US government invested \$376 billion into education, which is 17.49% of the \$2150 billion total expenditure of the Federal Government (Bureau of the Census, 1997). In recent years, the US government has begun to increase the spending on computer education. This includes a \$114 million increase to ensure every child has computer access, to give away old computers to schools (1999,1998), and to provide discounted telecommunications services to school and libraries (E-Rate, 1998). As a result, an adolescent who graduates from high school should have attained a reasonable knowledge of computers.

Computer Education Opportunities

For those who do not attend school, they can also explore the computer education programs given by the community. Not only government-funded associations organize computer programs, but many nonprofit associations also offer excellent computer programs. Focusing on the community of Worcester, many different kinds of computer

education programs are offered to the public. The associations that provided these programs are as follows:

- Accurate Staffing Services, Inc.
- City Manager's Office of Employment & Training
- French River Education
- Mackinnon Training Center
- Solution Plus
- Worcester Community Action Council, Inc.
- Worcester Public Schools
- Youth Opportunities Upheld, Inc.

The City Manager's Office of Employment and Training is the connection among most of these training centers. According to individual needs, the counselors in the City Manager's Office will refer people to different computer training centers for a more suitable program. In addition, some local colleges are also offering night classes for computer training.

The purposes of these programs are both for retraining and self-interest. Based on the majority of needs in Worcester, most of these computer education programs are career-oriented. According to the officers of these centers, many people in the Worcester area want to learn computer skills in order to find a new job or to improve their technical skills at work. Therefore, their computer training programs will teach more practical

computer applications to fulfill the requirements of the business environment, for example, MS Office, WordPerfect, and Lotus. Besides typing, using the operating system and Internet browsers are also introduced in most of the courses. Some training centers even combine business courses and computer courses together. According to the business fields, different specific computer skills would be covered in the course.

The officers of these above computer training centers mentioned that these computer courses are mostly taught using textbooks. The instructor will follow the sequence of the textbook and demonstrate in front of the class. Participants will have plenty of time to practice afterwards and questions will be answered individually while practicing.

Revenues and Employment of Computer Industry

While all tasks done with a computer require a combination of hardware, software and labor inputs, the study of computer industry should not be just focusing on the computer production. According to the book “The Computer Revolution” written by Daniel E. Sichel, the appropriate focus of analysis is computer services – consisting of all hardware, software and computer-related labor.

As mentioned before, most of the companies are deploying computer automation to different tasks and processes. People have more opportunities to explore the computer even in the working environment. They are becoming more and more dependent on the computers.

Revenues

The revenues generated by the computer industry have increased dramatically in the last twenty years. Especially in the software industry, the growth of the revenues is obvious from 1984 to 1993 (Table 6).

From 1984 to 1990, the revenues more than doubled. Although definitional change causes a discontinuity in the series in 1990, the extension of this series from 1990 to 1993 indicates that revenues increased at a rate of more than 10 percent per year.

| Year | Sales (in billions of dollars) |
|------------|-----------------------------------|
| 1984 | 19.1 |
| 1985 | 21.0 |
| 1986 | 24.0 |
| 1987 | 28.1 |
| 1988 | 34.8 |
| 1989 | 40.5 |
| 1990 (old) | 43.7 |
| 1990 (new) | 49.8 |
| 1991 | 54.1 |
| 1992 | 59.5 |
| 1993 | 67.4 |

Table 6 Revenues of US Software Industry
(Including the Integrated Computer)

Source: U.S Department of Commerce, Bureau of Census, Current Business Report

Employment

The growth of computer industry can also be studied through the increasing number of people employed in the industry. Calculating the rate of growth of computer-services labor is simple but can result in serious measurement problems. Difficulties arise because computer-services labor represents work done by end users, rather than by employees of the software industry. Despite these difficulties, the employment data provided by the U.S. Department of Labor can be used to get a rough idea of the pace of employment growth. One of the categories of software industry, the computer and data processing industry, is used. This category includes all data processing, information retrieval services, and computer facilities management service.

The employment in the computer and data processing industry is increased from 474.5 thousands in 1984 to 902.9 thousands in 1993 (Sichel, 1997). The detailed annual data is as follow (Table 7),

| Year | Employment (thousands) |
|-------------|-----------------------------------|
| 1984 | 474.5 |
| 1985 | 541.6 |
| 1986 | 588.2 |
| 1987 | 628.8 |
| 1988 | 673.4 |
| 1989 | 736.3 |
| 1990 | 771.9 |
| 1991 | 797.1 |
| 1992 | 835.6 |
| 1993 | 902.9 |

Table 7 Employment in the Computer and Data Processing Industry

Source: U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings

Teaching Strategies for Children

Our original target group was the high-risk youth population in the Worcester Youth Center. As our actual participants were elementary students, this education psychology section of the literature review was about them.

Educational Psychology of Elementary Students

The developmental characteristics of elementary students include physical, cognitive and socioemotional development.

Physically, students at the elementary grades often have physical fitness issues and their physical growth is slow and steady. Teachers should promote appropriate eating habits and model and encourage fitness awareness to them.

Cognitively, students can perform logical operations with concrete materials. Their attention gradually develops and communication skills improve. Teachers can provide wide variety of concrete experiences for initial learning. Also, teachers can involve students in activities that develop meta-attention and meta-communication.

On the socioemotional aspect, students of this age group usually pass through the stage of industry vs. inferiority. During this stage, academic self-concept develops. Teachers can create learning experiences that lead to success through work and effort.

Although thorough student development needs to cover all the three issues, we will focus our review on the cognitive growth and socioemotional growth because these issues are most related to our project.

Cognitive Growth of Elementary-Age Children

The key characteristic of developing elementary-aged students is a reduction in their dependence on perception alone and an increase in their ability to think logically. However, students generally retain much of their preoperational tendency to center and respond to perception rather than logic unless they are provided with a wide variety of concrete experiences. Therefore, it is most important for the teacher to provide initial concrete experiences for elementary students (Piaget).

The Development of Attention

Attention involves students' ability to focus their cognitive processes, such as perception, thinking, and memory, on a particular task.

Attention and Learning

Students cannot learn if they are not paying attention. Teachers can create an environment that is conducive to attention by establishing rules requiring order, placing desks apart from each other to minimize distraction, for instance. However, this approach leaves the students fundamentally unchanged.

Meta-Attention

Meta-attention means understanding the factors that influence attention and learning. This ability is developed over the school years but teachers can enhance this ability by trying to help the students to understand the role attention plays in learning. Some examples are: talking about it in class, demonstrating and providing a support structure. This aspect of student development is one of the most important. Failure to gain control over attentional processes often leads to frustration and future learning problems (Wong, 1985).

Socioemotional Growth of Elementary-Age Children

Developing feelings of competence, industry, and control over their own fate is the special challenge children face during this time. Erikson describes this period as the crisis of industry versus inferiority. A sense of industry develops when the child encounters challenges in school and, through hard work, experiences success. Inferiority develops when the child refuses to face the challenges, or when efforts result in repeated failures. It is important for students to see the positive feedback relationship between effort and success (Harter, 1983).

Students enter school with positive views of themselves as learners (Frey & Ruble, 1987; Stipek, 1988), but those views often become less positive over time. This is especially true for students who experience learning problems (Chapman, 1988).

Self-Concept

Self-concept is one's growing personal awareness. It is the sum total of one's perceptions about one's academic, social, and physical self. We base our decisions about who we are on our interactions with others, and teachers are second only to parents in their influence on those decisions (Phillips, 1990). Our academic self-concept is enhanced when learning experiences are positive, and vice versa.

Improving Self-Concept

There are two distinct directions to improve self-concept: (a) attempts to improve self-concept directly through teaching the students what is self-concept, and (b) attempts to improve self-concept as a by-product of increased academic success. Research shows that it is more effective for teachers to design program components so students can learn successfully, and self-concept improves as a result (Scheirer & Kraut, 1979) rather than trying to improve self-concept directly.

Effective Classroom Instruction for At-Risk Students

The overall suggestion is to offer more structure and support. However, to be specific, research results (Brophy, 1986; Peterson, 1986; Stallings, 1980) shows that the characteristics of past successful programs for at-risk students require teachers to create a successful learning environment in which students believe they can and will succeed (Table 8).

| Characteristic | Description |
|--|--|
| Greater structure and support | Course expectations need to be clearly laid out, and assignments and grades need to be designed to encourage achievement. |
| Active teaching | The teacher needs to carry the content to students personally through interactive teaching rather than depend upon curricular materials, such as the text or workbooks. |
| Instruction emphasizing student engagement | Interactive teaching with high questioning levels invites students to participate in lessons. |
| More frequent feedback | Student progress should be monitored frequently through classroom questions, quizzes, and assignments. |
| Smaller steps with more redundancy | Content should be broken down into smaller steps, and student mastery should be insured before moving on to the next step. Constant review of earlier materials provides for overlearning. |
| Higher success rates | Classroom questions, assignments, and quizzes should be designed to maximize opportunities for success. |

Table 8 Characteristics of successful high-risk youth programs

Source: Peterson, P. "Selecting students and services for compensatory education"

Implications on our Project

In terms of greater structure and support, our computer training program should be designed so that our assignments for the students were achievable. Achievable meant that they could complete the assignment within the class period with small challenges rather than difficulties.

For active teaching and instruction emphasizing student engagement, our program needed to invite students to participate through questions and personal instruction, rather than long classes. To gain more frequent feedback from students, we needed to constantly check the progress of individual students in class and help them to overcome their challenges. Our teaching materials also needed to be broken down into smaller and redundant steps so that they were manageable for the students. Finally, our assignments needed to guarantee a high success rate so that we could keep them interested and increase their motivation to learn.

Procedure For Designing the Training Course

In this project, we focused on the computer education of the high-risk youth at the Worcester Youth Center. Learning of the computer education opportunities provided by the community and running a computer training course in the center were the two main themes of this project. After collecting the result from research and interviews, a specific computer training course for high-risk youth was proposed.

Literature Review

In order to prepare for the computer training course, much research was done. Population demographics in the Worcester Youth Center, high school dropout rate in the US, computer education in the US, and computer industry in the US were the main areas of research. Based on the results obtained from the research, we then learned more about the youths' backgrounds and their different life styles, which helped us relate the usage of computers to their daily lives.

We began research with the background of the Worcester Youth Center. From the newspaper cuttings, agendas and annual reports, we learned about the goals of the Center, the programs it offered, the population demographics, and the education level of the youths. The more we knew about the Center, the better we could fit the computer training course into such an unique environment.

By searching the Internet, library, and with the help from Janet, the librarian in Memorial Hospital, we found out some proposed and running computer education

programs provided by the US government. The amount of money spent on the computer education reflected the government involvement in the program.

Since the government mainly supports computer education programs for the public school system, the people who are no longer in school cannot benefit from these resources. Unfortunately, most of the people in the Worcester Youth Center are high school dropouts. Therefore, we searched for the computer education opportunities provided by the community.

In addition, government reports of the high school dropout rate and the tax generated by the computer industry were found. These provided significant background information needed for our project.

Interviews

In order to setup a successful computer training course, opinions from different people involved in the Worcester Youth Center had to be considered. Several interviews with the peer leaders, the trustees and an experienced computer teacher from a computer training center in the neighborhood gave us a better idea for setting up the materials and the teaching style of the computer training course.

Adolfo Arrastia, the director of the Worcester Youth Center, and Cathy Racht, a trustee of the Worcester Youth Center, suggested some computer applications that would be useful for youths and would easily stimulate their interests. Omedys, one of the peer leaders, suggested some topics the youth might want to learn. John Carnegie, one of the trustees who just retired from the computer industry, shared with us what computer skills were necessary for the youths to get a job, and on the other hand, the computer skills for which employers were looking.

Susan Gionet, the on-line service coordinator of Matheson Apartments, had organized several different computer training courses for different age groups. She shared her experiences with teaching those computer courses, including the teaching styles that she used and the difficulties that she had faced. She also mentioned the materials that she chose for different classes and some special projects that her students did before. She provided information on the best ways to teach a computer course.

Proposing a Course Outline

Based on the result of the research and the opinions given by different people, a 5-class computer training course was proposed. Since we hoped the computer course could help the youth to find a job in the future, it was designed to be career-oriented.

We proposed to start with basic computer knowledge by using the tutorial provided by Windows 3.1. Then, two computer applications, MS Word and MS Excel, would be taught. Two classes would be spent on each application. We would teach them how to write a cover letter and a resume for finding a job using MS Word. We would teach them how MS Excel could help them to manage their personal finances. Through these examples, we hoped that they could realize the importance of computer literacy and that they would be willing to learn more.

Open House

In order to introduce this computer training class to more people before it started, an open house was held during the Christmas Party in the Worcester Youth Center on December 23rd, 1998.

A few weeks before the open house, Tut Liu, one of the peer leaders, helped us to design and post some flyers to promote this course. We used “Coming soon ... “ to draw the attention from the youths.

During the open house, a PowerPoint presentation designed by John Carnegie, one of the trustees of WYC, was shown to introduce how the computer knowledge would relate to the career. The slides used during the presentation were shown in Figure 1. The main theme of the presentation was to bring up the idea that the smart way to start their career would be through the computer industry.

People who were interested could sign up for the course during the presentation. Having the information collected from the sign-up form (Figure 2), people could be contacted for any updated information of the course.

Since the feedback from the open house was not as satisfactory as expected, we took an active approach to invite more people to join the course. By using the registration form people filled with the youth center, the staff called those who said they were interested in learning computer skills. Anyone who was interested in this course was


invited to the orientation on January 20th, 1999. Besides giving them the outline of this course during the orientation, we could also get some information from them.

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Coming Soon...

Learn To Make Money
The Smart Way

The VTC VTC Co.



Coming Soon...

Use Your Head
The Smart Way


The VTC VTC Co.



Coming Soon...

Work Smarter
Not Harder

The VTC VTC Co.



Coming Soon...

Get With
The 'Programs'

The VTC VTC Co.



Coming Soon...

Learn How To Be
A High Income Player

The VTC VTC Co.



Coming Soon...

Get Your Share Of
The High Income Markets

The VTC VTC Co.

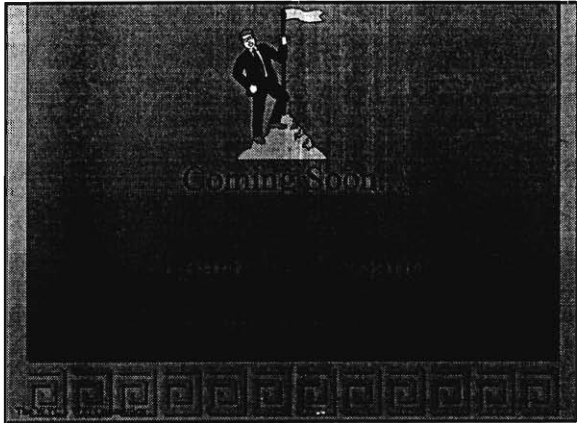


Figure 1 Open House PowerPoint Presentation

Computer Training Course

Sign-up

| | Name | Age | Contact Number |
|-----------|-------------|------------|-----------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |

Figure 2 Sign-up Form

Orientation

The Orientation was held on January 20th, 1999 at 5:00pm. The objective of this orientation was to show the potential participants the power of computers and how the computers could help them in their daily lives.

Seven people participated. We first demonstrated to them what MS Word and MS Excel could do by using 2 examples: resume and auto financing.

In the MS Word demonstration, we used resume writing to show them how computer could make a difference. We showed them 3 versions of the same resume: a hand-written sample (Figure 3), a type-written sample (Figure 4) and a MS Word sample (Figure 5). We contrast the difference among the three of them and brought out the superiority of the MS Word version: ease of changing and better formatting.

Bill Tipler

148 Main Street
Worcester MA 01609
(508) 767-0609

Objective To seek for full-time position for General Clerk

Education
 General Educational Development (GED)
 Worcester MA
 May 1998
 Doherty High School
 Worcester MA
 May 1997

Work Experience
 Peer leader of Worcester Youth Center
 Part-time 12/98
 Cashier in Shaws
 Part-time 11/97 - 1/98
 Delivery Service in ~~Worcester~~ Hutt
 Part-time 1/95 - 12/96

Computer Skill MS Excel, Windows 3.1, Typing (To copy)

Community Service Volunteer in Worcester ~~Center~~ Youth Center
 Visiting elderly in Memorial history

Interest Basketball

Language Spanish

Availability March 1999

Figure 3 Hand-Written Resume

Bill Tipler

148 Main Street
 Worcester MA 01609
 (508) 767-0604

Objective To seek for full-time for General Clerk

Education
 General Educational Development (GED)
 Worcester, MA
 May 1998
 Doherty High School
 Worcester, MA
 May 1997

Work Experience
 Peer Leader of Worcester Youth Center
 Part-time 12/98
 Cashier in Shaw's
 Part-time 11/97-4/98
 Delievery Service in Pizza Hvt
 Part-time 11/95-2/96

Computer Skill
 MS Excel, Window 3.1, Typing(70 wpm)

Community Service
 Volunteer in Worcester Youth Center
 Visiting elderly in Memorial Hospital

Interest
 Basketball

Language
 Spanish

Availability
 March 1999

Figure 4 Type-Written Resume

Bill Tipler

148 Main Street
Worcester MA 01609
(508) 767-0604

| | |
|--------------------------|--|
| Objective | To seek for a full-time position of General Clerk |
| Education | <p>General Educational Development (GED) Worcester, MA May 1998</p> <p>Doherty High School Worcester, MA May 1997</p> |
| Work Experience | <p>Peer Leader of Worcester Youth Center Worcester, MA <i>Part-time</i> 12/98</p> <p>Cashier in Shaw's <i>Part-time</i> 11/97 – 4/98</p> <p>Delivery Service in Pizza Hut <i>Part-time</i> 11/95-2/96</p> |
| Computer Skill | MS Excel, Window 3.11, Typing (70 wpm) |
| Community Service | Volunteer in Worcester Youth Center Visiting elderly in Memorial Hospital |
| Interest | Basketball |
| Language | Spanish (fluent) |
| Availability | March 1999 |

Figure 5 MS Word Demonstration (Resume)

Then in the MS Excel demonstration, we used an example in auto financing. We setup a spreadsheet that would do the calculation of the pay schedule (Figure 6). We then changed the numbers and showed them the computational power of the computer.

| I want to buy a car! | | | |
|----------------------|------------|-------|------------|
| Principal | \$7,000.00 | Month | Owe |
| Rate | 11% | 0 | \$7,770.00 |
| Period | 18 | 1 | \$7,615.82 |
| Monthly Payment | \$908.90 | 2 | \$7,444.68 |
| | | 3 | \$7,254.72 |
| | | 4 | \$7,043.86 |
| | | 5 | \$6,809.80 |
| | | 6 | \$6,550.00 |
| | | 7 | \$6,261.62 |
| | | 8 | \$5,941.52 |
| | | 9 | \$5,586.21 |
| | | 10 | \$5,191.82 |
| | | 11 | \$4,754.04 |
| | | 12 | \$4,268.10 |
| | | 13 | \$3,728.71 |
| | | 14 | \$3,129.99 |
| | | 15 | \$2,465.41 |

Figure 6 MS Excel Demonstration I

After showing them the computational aspect of MS Excel, we then showed them the other powerful aspect of the MS Excel, graph plotting. We used data from different financing options and plotted a graph to show the impact of the different options (Figure 7):

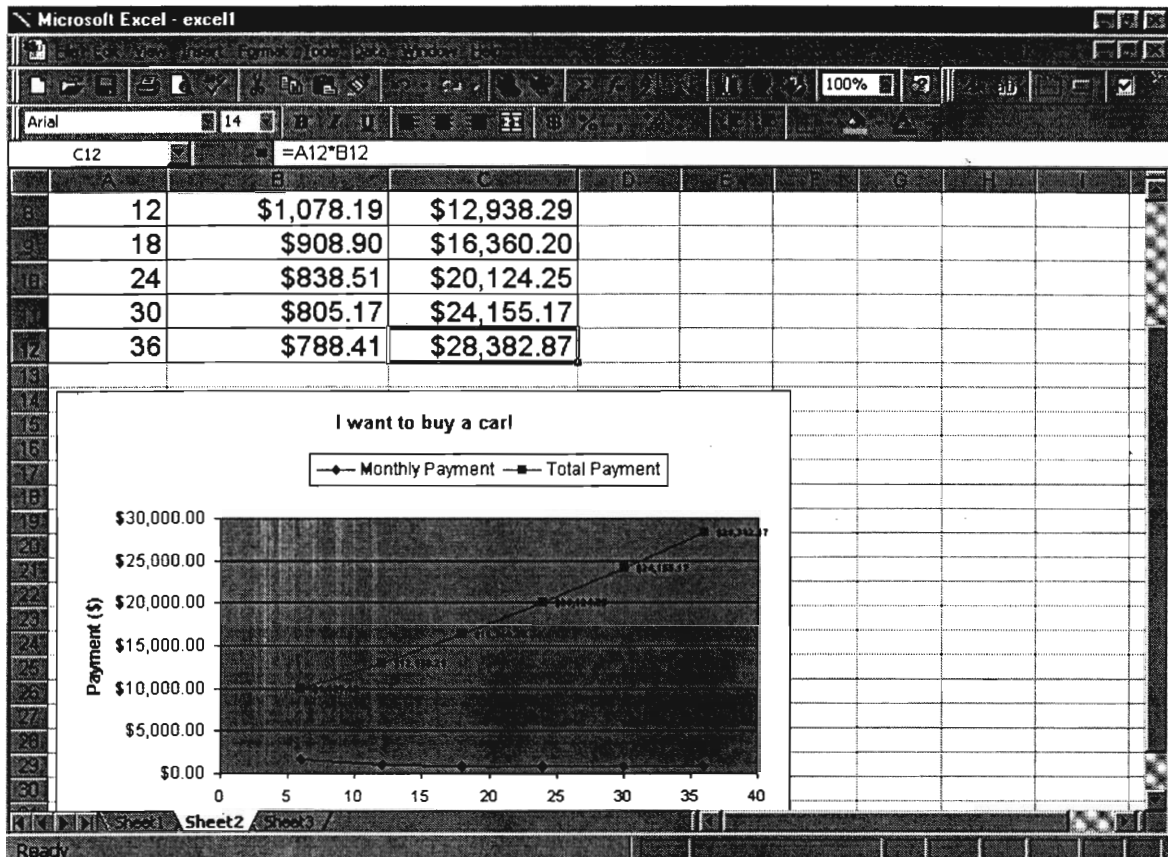


Figure 7 MS Excel Demonstration II

After the demonstration, we then outlined the computer training course to them (Figure 8). We walked through the outline with MS PowerPoint Presentation and tried to do everything as computerized as possible.

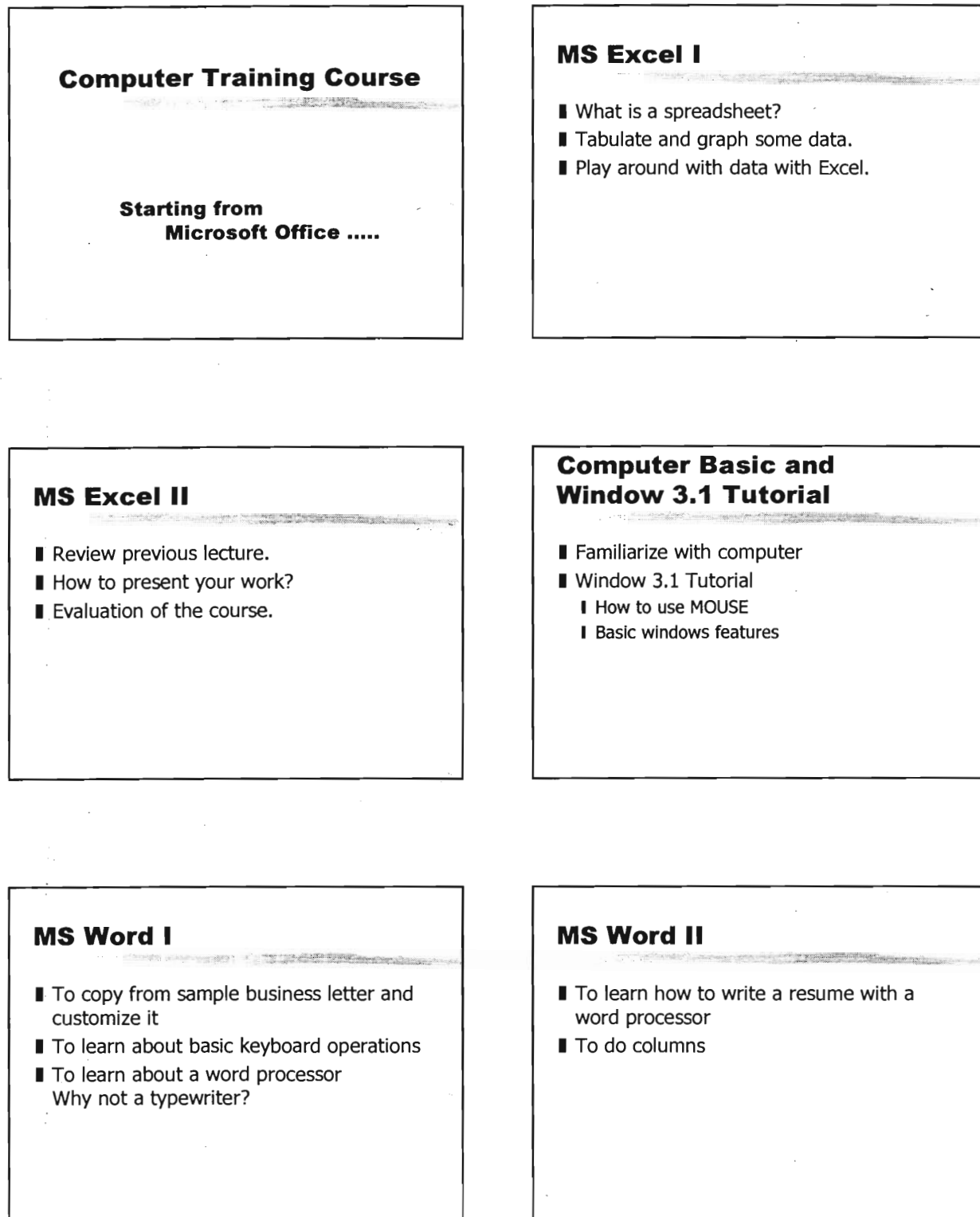


Figure 8 Orientation PowerPoint Presentation

At the end of the presentation, we asked them to fill out 2 forms: an assessment form (Figure 9) and an enrollment form (Figure 10). The assessment form was used to get their personal information and to learn the computer skills they had. It was build based on the information given by Professor Judith Miller, the director of the Center for Educational Development at WPI. The enrollment form served as a registration. Potential participants had to sign that form in order to register for the course. The idea was to have them experience the normal school registration system.

We had a good immediate turn out of the enrollment. However, the signed-ups did not recognize the importance of signature and did not show up since then. Therefore, we shifted our target group to elementary students in the Worcester Youth Center.

Conclusion

In the following section, we would present how each individual lesson planned, proceeded, and turned out. Evaluation of the whole project is followed afterwards.

Computer Training Course

By Worcester Youth Center

Assessment Form

Name:

Address:

Phone number:

Age:

School (last attended):

Grade (highest grade achieved):

What is your favorite game system, and why?

Have you used a computer before? YES NO

If YES, please list the software that you have used: _____

Please specify the time which you are available to attend the course every week
(day/ time)

Do you need baby-sitting? YES NO

Figure 9 **Assessment Form**

Computer Training Course

By Worcester Youth Center

ENROLLMENT FORM

Name: _____ Gender: _____

Address: _____

Phone #: _____ Date of Birth: ____ / ____ / ____ SS#: _____

| COURSE | Date | Time |
|--------|------|------|
|--------|------|------|

| | | |
|--------------------------|-------------|----------------|
| Computer Training Course | 1/27 – 2/24 | 5:00 – 6:00 PM |
|--------------------------|-------------|----------------|

By signing below, I will take the responsibility to attend every class of the Computer Training Course.

| | |
|-----------|------|
| Signature | Date |
|-----------|------|

* Since there are limited space in the Computer Training Course, not everyone submitted this form would be admitted to this course.

The Computer Training Course

On January 27th, 1999 the computer training course began. Since the original target group did not participate. The goals and the materials of the course had been changed. The details of every class are as follows:

Class 1 Microsoft Word I

Date : Wednesday, January 27, 1999

Time : 17:15 - 18:30

Venue : Worcester Youth Center

Objectives

1. To introduce basic MS Word functions.
2. To arouse the participants' interest in learning MS Word.

Introduction

This was the first class of the computer-training course. We originally planned to spend this first class on a Microsoft Windows 3.1 Tutorial. After telephone conversations with some of the participants, we found out that most of them had prior computer experience. Therefore, we changed our first class from Windows Tutorial to MS Word I. Instead of teaching them cover letters, we asked them to replicate a flyer (see attached).

Procedure

We first distributed a set of class notes (see attached) and a diskette. We then asked them to start up MS Windows and MS Word. This took up about 5 minutes.

We then demonstrated to them various functions in accordance with the class notes including:

- Font & Font Size
- Font Style
- Alignment
- Line Spacing
- Insert a picture
- Table
- Copy & Paste
- Border
- Shading
- Footer
- Preview

The class notes were so designed that they could use them to follow along in class. It was not class-specific, but a general reference.

Since the attendance was low (3 participants), we were able to do almost one-to-one instruction and went over the steps with them together. Most of them already knew

how to use MS Word. This class was a review session for them and also introduced to them some of the more advanced functions. This session took 60 minutes.

Afterwards, we asked them to save and print out the flyer, which was their own product. We also tried to get some feedback from the participants and reminded them of the next class at the end of the class.

Results

Of the original 7 people who have signed up, only 1 showed up. The other two participants were "walk-ins". They were below our targeted age group (16 or older) but we allowed them to join because they showed enthusiasm.

The youth center had warned us that it was easier to get those people interested than to get them show up. In view of this, we had collected their phone numbers. However, most of them were out of reach for various reasons: family does not speak English, wrong telephone numbers, etc. As a result, we could not really remind them to come.

We observed that while some students followed very carefully with the instructions, some liked to explore by themselves. The one-to-one ratio made private tutorship style of teaching possible. If the attendance goes up in the future classes, we must first demonstrate and then let them work on the classwork by themselves. We will walk around to assist them whenever necessary.

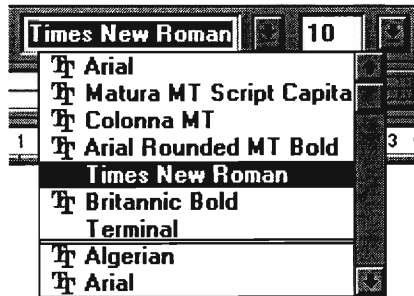
Concerning the low attendance, we have already notified the youth center and asked for their assistance to remind the original participants. If the attendance keeps on having more walk-in children, we may adopt a more general approach than our original career-oriented approach.

As for the class itself, we believed that it was quite successful. All the participants walked away with the flyer made by them. They all expressed an interest to come again for the following classes. "I have learnt what I wanted to learn." Said Daniel. Through the small assignment, we had successfully drilled them on some functions of MS Word and surely enough to attract them coming the following week.


Note of Class I




Fonts & Font Size

- Fonts can be changed from the toolbar at the upper part of the screen by dropping the arrow button next to the current selected font.







Font Style

- You can make **bold**, *italic*, underline text by pressing the icons: 

-  - bold
-  - italic
-  - underline

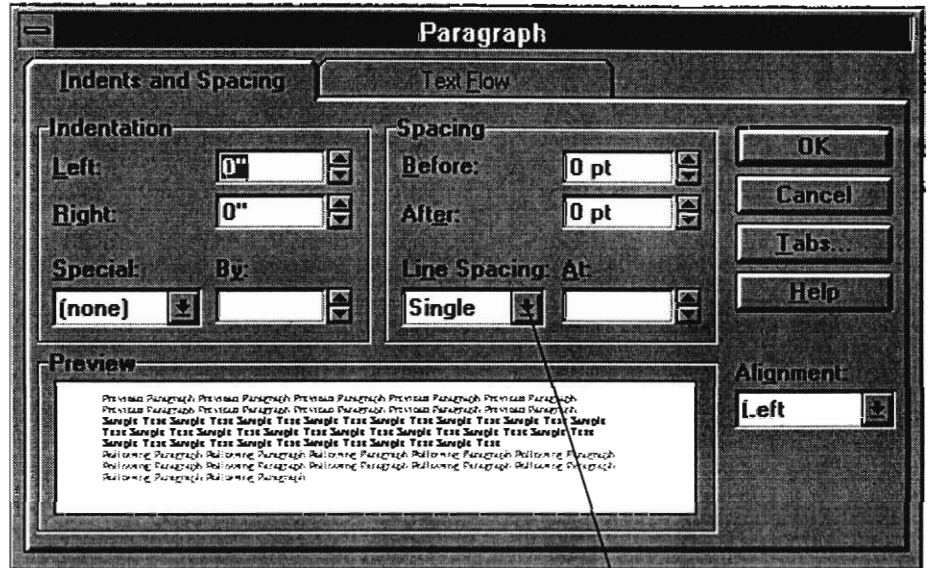
Alignment

- You have 4 options in alignment: left, center, right and justify. 

-  - Left alignment
-  - Center alignment
-  - Right alignment
-  - Justify

Line Spacing

- From the pull-down menu, **Format --> Paragraph**
- A dialog box will pop up:



- In the **Indent and Spacing** tab, you can find **Line Spacing** in the middle section.
- By dropping the arrow, you can choose among: Single, 1.5, Double, At least, Exactly and Multiple.

Insert Picture & Customize Picture Size

- The power of a word processor is that it allows you to insert picture into the document. Rather than having a text-only document, you can produce a document that has picture in it.

- To insert a picture:

Insert --> Object --> Create New tab-->

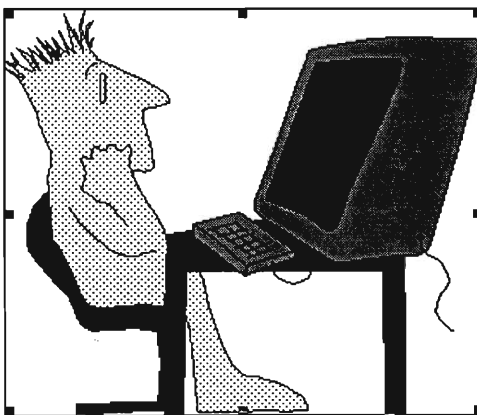
Microsoft Clipart Gallery --> OK

Select a picture --> **OK**

- To customize its size:

Click on the picture and you should see the border highlighted.

Resize the picture as you would resize a window.



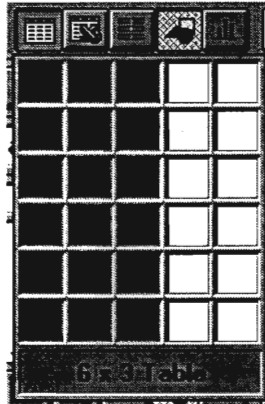
Table

- Besides pictures, tables can also be inserted into the document.
- To insert a table:
Click on the icon on the upper right hand corner, a grid of cells will come up.



Table

By choosing the number of cells, the number of columns and rows can be set.



Copy & Paste

- When entering the same data over and over again, you can make use of the copy and paste function:



paste

copy

cut

- First you select the text you want to copy, highlight it with the mouse pointer and then you click on the **copy** icon.
- Next, move the pointer to the desired location and then click the **paste** icon. You should see the selected text displayed.
- Another similar function is the cut and paste function. The procedures are the same but the results are different. Instead of having 2 copies of the same text, you are effectively moving the text from one place to another.

Border

- For highlighting the table, click on the most right icon at the lower toolbar.



- Another toolbar will appear under that icon, by adjusting the setting in that toolbar, the style of the border of the table can be changed.

Shading

- To shade some participate cells in a table, one of the function in that additional toolbar mentioned before will be used.

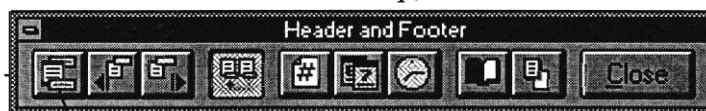


Shading

- First, highlight the cells which would be shaded. Then dropping down the arrow to adjust how the cells would be shaded.

Footer

- To put additional information at the bottom margin of the page, footer:
- First go to the pull down menu, **View --> Header and Footer** a new window will come up,



Switch between Header and Footer

- A box surrounded by dotted line will appear at the bottom of the page, you can type insides of the box.

Preview

- Before printing out the document that you made, you can use **preview** to see what does the print out is going to look like.
- To preview a document by simply click on the icon at the upper left part of the screen.



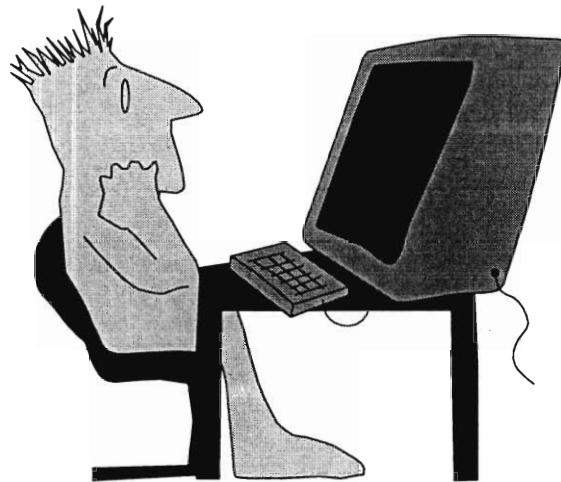
Preview

Sample Flyer

Computer Training Course

presented by the

Worcester Youth Center



| <i>Date</i> | <i>Time</i> | <i>Topic</i> |
|-------------|----------------|--------------|
| 1/27 | 5:00 - 6:00 pm | MS Word I |
| 2/3 | 5:00 - 6:00 pm | MS Word II |
| 2/10 | 5:00 - 6:00 pm | MS Word III |
| 2/17 | 5:00 - 6:00 pm | MS Excel I |
| 2/24 | 5:00 - 6:00 pm | MS Excel II |

Be on time!!

Classe 2 Microsoft Word II

Date : Wednesday, February 3, 1999

Time : 17:00 – 18:30

Venue : Worcester Youth Center

Objectives

1. To review the materials taught in the first class
2. To introduce informal letter

Introduction

In the second class of the computer-training course, we taught them how to write an informal letter by using the functions introduced in the first class.

Procedure

First, a sample letter was distributed to everyone. Then, we reviewed the functions that we taught in the first class with them, especially those functions that would be used in writing the letter. They included:

- Font & Font Size
- Font Style
- Alignment
- Usage of Tab Key

Then we introduced the format of a letter, including the address, salutation, body, complimentary close and signature block.

After they finished copying the sample letter, we asked them to put their own name in the letter. They then saved the file into their own diskette and printed a hard copy to take home.

Results

On this Wednesday night, they had the board meeting so we moved to another room for the computer course. We were not able to use the projector to teach because of the setting of that room, we spent more time to teach them individually instead of lecturing for the whole class.

Again, none of the people who signed up participated in this class. Four other people who are below our targeted age group participated. So we used the backup sample to teach them how to write a letter by using MS Word.

Through teaching them how to write a letter, we noticed that they do not know how to type using the keyboard. So we taught some basic concept of the typing skills as they seemed interested in learning.

After the class, we asked for their name and phone number so we can contact this group of participants before the next class.

Sample Letter I

148 Main Street
Worcester, MA 01609

John F. Baird, Manager
Hopkins International Corporation
7532 Grand Avenue
Boston, MA 01937

February 1, 1999

Dear Mr. Baird:

Your listing for a "capable private secretary" in the January issue of the "Accountancy Review" interests me very much. As the enclosed indicates, I have had secretarial experience from one of the part-time job.

I am thoroughly familiar with all facets of office detail. Doing bookkeeping, preparing monthly statements, handling correspondence, watching overdue accounts, and taking rough drafts of audits, are among the myriad duties that I am prepared to fulfill.

I would appreciate for a chance to talk to you in an interview and to tell you more about my abilities and experience. Thank you for your kind attention and look forward to hearing from you.

Yours truly,

Jennifer Tipler

Sample Letter II

148 Main Street,
Worcester, MA 01609

February 3, 1999

Dear Peter,

How are you? It has been a while since I last write to you. I am learning Microsoft Word at a local youth center. Today is my second lesson and I type this letter as an exercise. I hope you wouldn't mind.

Please say hi to your family. Take care!

Best wishes,

Jennifer

Class 3 Microsoft Word III

Date : Wednesday, February 10, 1999

Time : 17:15 - 18:30

Venue : Worcester Youth Center

Objectives

1. To introduce MS Word tables.

Introduction

This was the third class of the course. We learned from the second class that most of the students were not familiar with the keyboard and typing. Therefore, we asked them to make a table using MS Word and insert pictures to minimize typing.

Procedure

We first asked them not to sit in front of the computers so that we could do a demonstration. In the demonstration, the following procedures were shown:

- How to make a table.
- How to insert a picture in a table.
- How to move around cells in a table.
- How to change fonts and font size.

The demonstration took 10 minutes. Afterwards, we distributed a handout (see attached) and asked them to duplicate it. Most of them did not have any big problems in carrying out the tasks.

The most common problem for them was to advance to next line by hitting the ENTER key. This concept was repeated to them many times before they could actually remember. Another common problem was changing cases. Many of them failed to realize or to co-ordinate the function of the SHIFT key.

They spent about 60 minutes to complete the task. Only one group was not able to complete because they forgot too many of the basic operations we covered in the previous classes.

Results









This class went very smooth and very well. As the children becoming more familiar with us, they were losing control and sometimes we had to keep up the discipline by reminding them to keep quiet and pay attention during the demonstration.

Generally speaking, their retention from the previous classes was very good. They could carry out most of the tasks by themselves with little intervention from us. We spent most of the time with one or two specific groups that were behind.

In view of the above documented problems, we would teach them how to type and discuss some quick keys and special keys on the keyboard so that they could smoothly carry out their assigned task for each class.

Sample table

Frances's Timetable
on Wednesday

| | Wed | <i>Remarks</i> |
|-------------|---|---|
| 9:00-10:00 |  | Bring HOM EWORK!! |
| 10:00-11:00 |  | |
| 11:00-12:00 |  | |
| 12:00-1:00 |  | |
| 1:00-2:00 | Lunch | |
| 2:00-3:00 |  | STUDY in Worcester Youth Center |
| 3:00-4:00 |  | |
| 4:00-5:00 |  | |
| 5:00-6:00 |  | COMPUTER COURSE!! REMEMBER to bring the diskette and notes |

Class 4 Microsoft Word IV

Date : Wednesday, February 17, 1999

Time : 17:15 - 18:30

Venue : Worcester Youth Center

Objectives

1. To learn typing skill
2. To type a paper using MS Word

Introduction

This was the fourth class of the course. From our observation of the previous classes, most of the students had difficulties with typing. They were either typing using one finger or did not even know where the letters were. As many of them had to use the computer to type papers for homework assignment from school, we taught them some typing skills as well as how to organize a paper by using MS Word.

Procedure

They were asked to sit away from the computer first as they did last time so they could pay more attention to the demonstration. The first thing we taught was how to type. Notes were given to each of them (see attached) which included the position of the fingers and the four special keys on the keyboard. A hand written sample writing was also given (see attached). After they received the material, we demonstrated some basic typing skills, including:

- How the fingers are placed on the keyboard
- How to use all ten fingers to cover every key on the keyboard
- The function of the keys: Tab, Caps Lock, Shift and Enter.
- How those four keys related to typing

Then we taught them how to organize a paper and type it into the computer. Some of the function of MS Word was reviewed again, including:

- Font
- Font size
- Alignment
- Underlining
- Those four special keys on keyboard: Tab, Caps Lock, Shift and Enter

The sample writing was not written in the suggested format, so they had to use what we taught them in order to finish this task. Because the sample paper was written by hand, students noticed the difference between using a computer to type and writing it by hand. Through this practice, they not only learned the format of typing a paper, but also experienced the formal typing skill.

We spent about 20 minutes in demonstration. After that, they sat in front of the computer and practiced for the rest of the period. Since most of them were not familiar with the keyboard, we needed to help them one-to-one and reminded them to remember the position of the keys instead of finding them every time.

Due to the small class size, we had enough time to help them individually. According to what we observed, locating the position of the letter was the most common problem. Besides, some of the students wanted to give up after practicing for a while. In order to keep them interested, we gave them some little successes. By giving some smaller tasks one by one, we wanted to encourage them and help them build up their self-confidence.

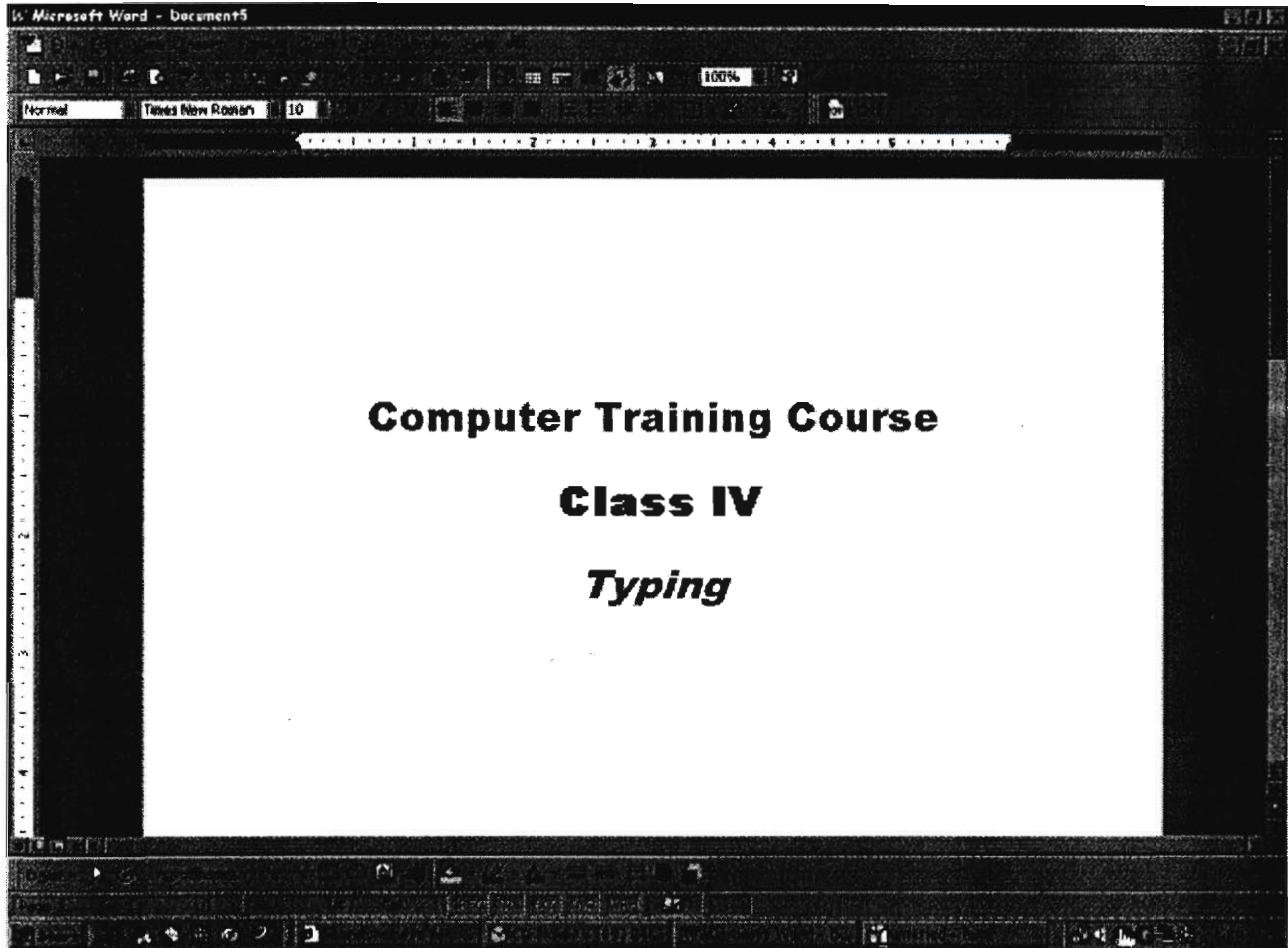
For those who could not finish the practice, we helped them save the file so they could continue to work on it later. For those who finished, they had a hard copy of the paper they typed.

Results

Since typing is really useful for everyone using a computer, we should spend more time on practicing if time is available. As a first typing class, they did good and got the idea on using all ten fingers to type. Also they were willing to ask questions when they were having problems, it also helped us to know their difficulties better.

In general, they could follow what we taught and applied it to the practice. Although half of the class could not finish the whole task, they can type faster than before. It should help them to save some time for typing homework.

We were thinking of giving an actual application for them in the next class, in which they have to use the typing skill as well as the knowledge on using MS Word. It will be an opportunity for them to review all they learned from the course, besides we would be able to remind them some special point individually by helping them work on that practice. Since the next class will be the last one of the computer course, we would like to know how much they have learned from this course. The practice that we give will help us to confirm what they got from the course. So it might be one of the materials for the course evaluation.

Note of Class IV

KeyBoard

| | | | | | | | | | | | |
|---|---|---|----|---|---|---|---|---|---|---|---|
| ! | @ | # | \$ | % | ^ | & | * | (|) | { | } |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| Q | W | E | R | T | Y | U | I | O | P | [|] |
| A | S | D | F | G | H | J | K | L | : | " | ' |
| Z | X | C | V | B | N | M | < | > | ? | | |
| | | | | | | | , | . | / | | |

Put the fingers on the **Highlighted** key of the keyboard.

Special Keys on the keyboard

Tab

- Do indention
- Hit this key once to indent half inch

Caps Lock

- Press once to capitalize every letter (no effect on symbols)
- Press again to cancel this function

Shift

- **Hold** it to capitalize letters and display the symbol at the upper part of the keys
- It functions as long as this key is held.

Enter

- Advance new line

Sample Assignment**Tommy White****Period 5****Computer**

I used to think that computer was only good for playing games. Actually it can do more than that as it is so useful and powerful.

Computer has been used in many different areas. In school, student uses some self-learning computer software to practice English and Mathematics. With those colorful and attractive pictures, students got more interested in learning. At home, people can read news or check today's weather through the Internet. They can even order goods through it.

Since computer is so widely used, we should start learning how to use computer and get familiar with some of the useful software.

Class 5 Evaluation

Date : February 24, 1999

Time : 17:00 – 18:00

Venue : Worcester Youth Center

Objective

1. To provide more practice with Word and typing
2. To collect evaluations of the course

Introduction

This was the last class of the course. A questionnaire written in MS Word format was copied to their machine and we asked them to complete the questionnaire online. We went through the questionnaire with them question by question and upon completion, each of them was awarded a certificate (see attached).

Procedure

The complete questionnaire was typed and copied to their computer in the c:\temp directory. We first showed them how to open a file from MS Word. Then we asked them to do it by themselves. When everyone had finished, we continued going through each question on the questionnaire with them.

Questionnaire

The questionnaire was divided into 3 parts (see attached). Part A dealt with the participants' general information. Part B asked for some feedback on the course and finally, Part C asked about the participants' more macroscopic view of the course and interests in computers.

Students spent most of the time completing question 5 of Part B. The question asked them to recall what they had learned from the course by marking in the box x or n, x meant learned and n meant did not learn. We tried not to remind them of what the item was to see if they could remember the functionality.

Summary of Questionnaire

See attached.

Results

The feedback from this course was very positive. We achieved the goal of arousing participants' interests in learning more about computers as well as considering the working with computers as their careers. We have set up an interview with Adolfo, the director of the youth center, and John, the coordinator from the youth center about this course.

Computer Training Course

by
WYC & WPI

A. General Information

1. How old are you?
2. Are you a student? If yes, what grade are you in?
3. How did you find out about this computer training course?
4. Did you have any computer experience before this course? If yes, how much?

B. The Course

1. Which part of the course did you think was interesting?
2. Which part of the course did you think was not so interesting?
3. Which part of the course did you think was useful?
4. Which part of the course did you think was not so useful?
5. Please check all that you have learned in the course:

| | | | | | |
|------------------|----------------|--------------|-------------|---------|-----------|
| Font | Font size | Font style | Center text | Border | Table |
| Insert a picture | Copy and Paste | Line Spacing | Shading | Preview | CAPS LOCK |
| ENTER | TAB | SHIFT | Typing | | |

6. On a scale from 1 to 10, with 10 as the best, how would you rate Frances and Raymond for teaching this course?

C. Others

1. Do you want a computer club at WYC?
2. Please give this course a grade (A, B or C).
3. Are you interested in working with computers in the future?

Summary of Questionnaire

Computer Training Course

by

WYC & WPI

A. General Information

1. How old are you?

Participants ranged from 7 – 11.

2. Are you a student? If yes, what grade are you in?

All of them were students from Grade 2 to Grade 5.

3. How did you find out about this computer training course?

Most of them heard of the course from friends or us, one walked in.

4. Do you have any computer experience before this course? If yes, how much?

The response to this question were very diversified.

B. The Course

1. Which part of the course did you think was interesting?

Typing, making time table, using computers and playing¹.

2. Which part of the course did you think was not so interesting?

Talking (lecturing), drawing² and could not work longer.

3. Which part of the course did you think was useful?

Typing, using the computers, everything.

4. Which part of the course did you think was not so useful?

Table, picture, nothing.

5. Please circle all that you have learned in the course (*The number in the box shows the number of students recall the functionality, maximum is 4*):

| | | | | | | | | | | | |
|------------------|---|----------------|---|--------------|---|-------------|---|---------|---|-----------|---|
| Font | 3 | Font size | 3 | Font style | 1 | Center text | 2 | Border | 2 | Table | 3 |
| Insert a picture | 3 | Copy and Paste | 3 | Line Spacing | 2 | Shading | 2 | Preview | 2 | CAPS LOCK | 4 |
| ENTER | 4 | TAB | 4 | SHIFT | 4 | Typing | 4 | | | | |

6. On a scale from 1 to 10, with 10 as the best, how would you rate Frances and Ramond for teaching this course?

Average 9

C. Others

1. Do you want a computer club at WYC?

Yes in all response.

2. Please give this course a grade (A, B or C).

A: 2 A+: 2

3. Are you interested in working with computers in the future?

Yes: 3 No: 1

Notes:

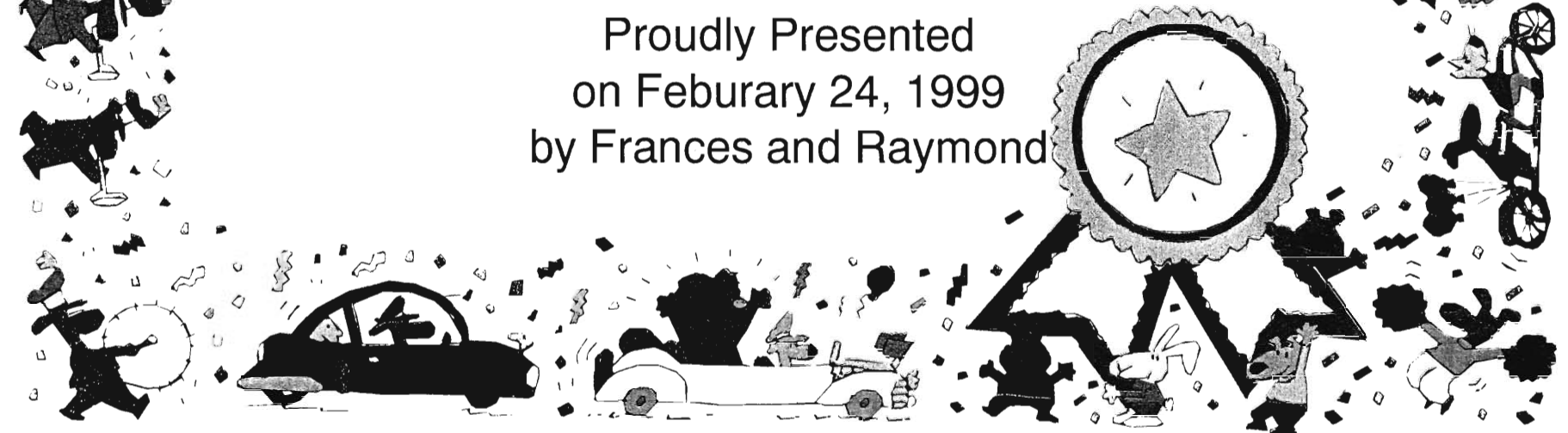
1: We did not actually let them play.

2: We did not teach them draw. Probably he/she was referring to inserting pictures in MS Word.

A STAR YOU ARE,

For successfully completed the
Computer Training Course
by the Worcester Youth Center and
Worcester Polytechnic Institute in
Microsoft Word

Proudly Presented
on February 24, 1999
by Frances and Raymond



Evaluation

The evaluation consists of interviews and evaluation forms: We interviewed Adolfo Arrastia and John Carnegie to get their opinion about the course and the idea of the computer class. We asked the staff in the youth center to get the feedback from the original group that had registered for the course. Evaluation forms were given out to the participants. Every member of our project team has individual evaluation as well.

Evaluation from the Participants

Feedback from the participants was gathered basically from the questionnaire (see previous page) given at the last class of the course. The questionnaire was divided into 3 parts (see attached). Part A dealt with the participants' general information. Part B asked about the feedback of the course and Part C asked about the participants' macroscopic view of the course and interests in computers. Some feedback was gathered by word of mouth during classes.

There were 4 students who showed up consistently. Although we had a few more walk-in students in some classes, only those 4 students were invited to complete the questionnaire.

Response and Analysis to Questions

The participants' ages ranged from 7 to 11 years old attending school from Grade 2 to Grade 5. Besides one initial walk-in student, the rest of them heard about the course through word of mouth from ourselves and from peers in the youth center. None of them

mentioned the flyers posted up inside the youth center and the open-house session in December. This passive approach of drawing their attention can be improved by more actively reaching out to the people in the youth center.

In terms of computer experience, one of them had no experience at all while the rest of them had some experience from a few weeks to a few years. As the course progressed, it proved that this was not a major issue for these learners because our topics were new for them all and we treated them as if they had no experience in computer at all.

The classes on typing and making timetable were indicated explicitly as interesting parts of the course. In fact, it was a surprised that they enjoyed the typing lesson because the class covered nothing more than the typing skill and a few special function keys on the keyboard. It was in fact a challenge for them to learn the proper way of typing instead of their 2-finger typing, this could be a reason. As for the timetable, it focused on a few functionality and required them to repeat over and over again, therefore they could learn the skill efficiently.

Lecturing could not be longer and drawing were the not so interesting parts in the course according to their feedback. For these young learners, it was understandable that they would have a short attention span. In fact, we kept our presentation within 15 minutes so that they could have more time interacting with the computers as much as possible. Usually each class ran until all of them finished the exercise we gave. As for the

comment on drawing, we did not teach them to draw. Probably he/she was referring to the class on inserting pictures in MS Word.

Among the responses about the part of the course that was useful, most of them said that everything in the course were useful. One particular comment was made about typing. It would be no doubt that typing skill was essential for using MS Word as well as the computers.

As for the not so useful part, making a table and inserting a picture were mentioned. The table we asked them to make in one of the classes involved inserting a lot of pictures. With the computer systems in the youth center, it was in fact a very slow and frustrating part. For young children like them, a timetable might not be very useful for them because it made little difference for them not to spend the time according to a timetable.

The questionnaire listed all the MS Word functionality covered in the course and asked them to indicate if they had learned those from the course. Most of the functionality taught had more than half of the participants showed that they had learned them from the course. It was a very positive response.

For those functionality which had fewer recalls, terminology could be one factor. Another factor was that they actually had less exposures to those functionality, such as bordering and shading, in the classwork. Also, the functionality shown by an icon tended

to have more recall because they were more obvious for them. In general, they recall better the typing skills and the special keys on the keyboard than MS Word functionality. The result in this question provided a positive justification of fulfilling one of our project goals: to provide basic computer skills to high-risk youth.

The responses for the instructor as well as for the course in general were both very positive. They were asked to grade the instructors in a 10-point scale and the average was 9 while the average grade for the course was an A. The way that we tried to befriend really helped us to better communicate with them because we knew their background better and thus could tailor-make our course materials for them according to their knowledge.

All of them wanted a computer club to be run at the youth center. With the current human resources at the youth center, it is not immediately feasible. However, we have reflected this interest to the management of the youth center and hopefully, a computer club would be set up in the near future.

The final question on the questionnaire was about their interest in working with computers in the future. Though not all, most of them indicated interest in doing so. This is a fair justification that we have met another project goal: to encourage them to join the computer industry.

Evaluation from the Executive Director of the Worcester Youth Center

We met with Adolfo Arrastia, the executive director of the Worcester Youth Center, on March 3, a week after the course was finished. During the 1-hour interview with him, he shared with us his evaluation about this computer training course.

He personally thought that this course did not meet his expectation in the sense that it was too short. He would like to see this course last much longer and to cover more software, especially the whole Microsoft Office suite.

He suggested that we should try to capture the participants' attention and motivate them to learn. Besides merely teaching them how to use the computer, we should establish a clear objective, namely to keep learning.

He also suggested that while we should not discourage the participants on their skills and confidence on computers, we should give them tasks adequately difficult to inspire their curiosity to learn.

When asked about why the original target group did not show up, he said that computers basically did not interest that group. Some food might be needed to induce their initiative. The group was a transient population of the youth center. Their attendance at the youth center was not consistent so it was really difficult to make them show up. Their attention span was among the shortest so the first meeting was the most crucial in terms of impressing them and needed to keep their interest.

According to Arrista, they claimed that they knew about the software that we planned to teach them. We should prove to them that they did not know and show them that there is always more to learn.

Adolfo expressed that he would definitely want to see the program to run again, however, differently. He would like to see 2 programs: one for adults and one for children. He thinks that the course can be shorter but could cover more software packages. He would like to see the whole training to be something that keeps moving but each software is re-visited after a certain period of time so that the participants would be chasing after the program but not the reverse.

He commented that the class could be so structured that the participants could have more time to work on the computer and try more to keep them interested.

He believes that those who go to school would actually like this kind of computer training course more because those who do not go to school are self-pitying. They have little incentive to learn. The way to get these people, he suggested, was to tell them that they could make money out of computers.

He finally commented that we should spend more time on basic training like the file and directory structure of the computers. He remarked that many times when the

people in the youth center saved a file, they did not know where they saved it and they needed to use the Find File function to locate the file.

Evaluation from the trustee of Worcester Youth Center

On March 17, we had an interview with John Carnegie, one of the trustees of the Worcester Youth Center. After we explained the details on how the course went and some of the responses from the participants, we asked some questions for his feedback of the course and his opinion on running another computer course. He pointed out what we can improve in the computer course and some other new suggestions on running the course again. Providing more service with the course, taking surveys, pairing up a peer leader program and mentor program, and setting up a “Role Model” are the suggestions that Carnegie mentioned. He also emphasized the importance of computer skills in this community and the job opportunities related to computers.

Starting from evaluating the computer course, Carnegie thought that the problem might be because of the course schedule since the original target group did not show up. Most of the youth have to handle many problems everyday. Especially for those who have jobs, their timetables may be full or change in a short period of time. For some of the youth who do not currently have a job, they cannot even be sure if they will get a job in the future. It will be hard for them to keep going to the class throughout the whole course or even start going to the class.

One of the solutions that Carnegie suggested is to make the course more convenient for the participant, for instance, by providing transportation or changing the schedule of the course. While the youth are able to go to the class more often, they will be able to participate regularly. To provide all those extra services, we might need to ask

for the board's support. Since the youth signed the enrollment form during orientation, they have the responsibility to attend every class. John said that we also have the responsibility to get back to those who signed the enrollment form but did not come to the classes. It is a direct way to know the reason why they did not go to the class. Also, we can get suggestions from them in order to improve the course.

When we asked Carnegie if he wanted this kind of computer course to be run again, he was still showing his interest in running, but instead he would like to see some improvements to be done in order to fit the target group better. The first tasks would be to start from the enrollment form of the course. He suggested that we could set up a more detailed survey to get more information from people in the center. Those surveys should be filled out and summarized before the course materials had been set up. In the survey, we could ask for the person's level of computer knowledge. Knowing what they had learned would be useful for us to set up the materials so we would not teach something they already know. Besides, Carnegie also suggested that we could also ask what they wanted to learn from the course. Since the course materials would not be set at that point, we could include those suggested materials in the course as well. Another suggestion that Carnegie pointed out was specific to those who were enrolled in school. He thought that we could identify ways to get information of the student from the school. We would want to know what they were learning in school, and it would be helpful for us to tailor the course to fit more to the student's needs. We can adjust the course either by teaching new materials or by following the sequence of their schools.

In order to teach the course effectively, Carnegie said that we could work closely with the peer leaders in the youth center. Since the peer leaders know the youth in the center better, especially their interests, one of the suggestions that he thought of would be pairing up the peer leader program and the mentor program. The mentor program would pair up one mentor with one or two students so the mentor can work closely with his/her students to make sure they know the basic computer knowledge. Also, the mentor could help the students to catch up if they miss or do not understand anything in the class. Under this mentor program, we can make sure all students are at the same level during the classes and that they will have someone to talk to when they have questions.

If we bridge the two programs together, we can first teach the peer leader group about the material that will be taught in the course, so we can work together throughout the course, such as preparing the teaching materials or teaching in the class. To get this mentor program running, many people will need to be involved in the program. Therefore, every mentor will not have to take care of so many students at the same time. That is the reason why Carnegie suggested to invite the peer leader group as well as college students to join this program.

Besides the mentor program, the lab equipment was also a concern of Carnegie's. He would prefer having a more standardized computer lab for the class that would be easier for teaching this kind of course. If such a computer lab could be provided, John suggests teaching the students to fix the computer or teaching them to use every component of the computer one by one, such as CD Rom driver, scanner. Also,

networking is another exciting and attractive area worth teaching. Such knowledge would be really useful for them to learn besides software.

Another point that Carnegie mentioned was that most of the youth in the center did not realize the importance and excitement of using computers. So the short term plan that he was thinking of would be setting up a “Role Model” for that group of youths. The “Role Model” in the center that he suggested should be someone who worked with the computer, and he/she would be able to show the youth the excitement of the computer. Also, he/she could show them that working with a computer would be a way to earn more money. By doing that, more people would realize the necessity of learning computer skills. As the result, more people would be attracted and different kinds of programs could be held.

Carnegie is now working on projects related to the information technology industry in Worcester, and he predicts many job opportunities will be offered in the near future. Therefore, he is very concerned with computer education. He wants to educate a group of people to work for the IT industry and he also believes that the computer industry is the leading field in the future.

Evaluation From Youth

During the orientation, seven people attended and all of them signed the enrollment forms which said that they would attend all five classes of the computer training course. When the course started, only one of seven signed up participants attended twice and the rest of them did not show up at any of the classes. After the course was finished, one of the peer leaders helped us to ask those people why they did not show up in the course, and their opinions of the course. Among those seven people, four of them did write down their responses and the rest of them could not be reached as they did not go to the youth center anymore.

Summarizing those four responses, the common reason that they could not show up was they did not have time. Three of them said they were too busy on Wednesday night. Among those three, two of them suggested to change the class in the morning or in the afternoon. The other person said he could not spend his time on learning how to operate the computer for now but he was willing to learn it later.

For the one who participated in two classes, she said she did enjoy the time in the course and she did learn some useful materials. Since she had not enough time, she stopped going to the course afterward.

Evaluation from Siu Nin Lam

When I look at this project, it is not just an IQP teaching grade school pupils at a local youth center how to use the computers. It is also an exercise of responsiveness to unanticipated circumstances.

Our initial interest was on implementing a database management system in the UMass/Memorial Health Center. When we approached the administration, we were introduced to the Worcester Youth Center after a few meetings. Finally, our project became a social service and educational project.

For myself, it was not the first time I was involved in social service and provided computer training. However, the planning process was much more thorough than any other previous projects I had been involved with. My partner, Frances, and I presented our plan to many individuals and they gave us valuable advice and suggestions. This process of sharing experience was one of the critical factors that made this project a success.

During the planning process, I came to know the advantages of teamwork. I think from a top-down perspective and Frances thinks from a bottom-up perspective, our styles really complement each other. We were able to look at the same problem more completely and thus make our project proposal more thorough.

The day we finally began to teach the course, we found out that those students who came in the orientation day did not show up. However, a group of cheerful grade school children came. We shifted our target group from adolescent high-risk youth to these young children. Our course materials were revised, our teaching strategies were changed and our goals were changed, too. Nonetheless, the course was completed with extremely good feedback from the participants.

In terms of meeting the project goals, I believed this project has covered all the goals. Of course, this project can be improved in a lot of areas. I agree that this project is too short and it would be more beneficial to cover the whole MS Office suite. However, considering all the unanticipated changes and the short time frame we had for this project, I believe we have done the best we could.

Evaluation from Frances K. Leung

Starting in B term, we began to define our project's objective. With the help from Memorial Hospital, Cathy Racht, one of the trustees of the Worcester Youth Center, provided background information of this center. This information helped us to understand the goal of this center and the direction on organizing a more suitable computer course. The reason why this center is different from the other youth centers in Worcester is because this center is run by youth. It is now starting to expand in order to service more people in the community. One of the programs is setting up a computer course for the high-risk youth in order to help them find a job.

In the process of setting up the outline and schedule of the project, I first experienced organizing a project with an organization. Since this project concerned the youth in that center, we got to know their needs and expectations for the course. After summarizing the responses from different people involved in the youth center, we started to design a tailor-made course for that population group. We were not only finishing the tasks of the assignment one by one as we usually do in school, we also had to interact with different people and asked for their opinions. Besides, we had to think of what they might need even though our clients are in different discipline. Based on what they need, we organized a program which would satisfy the clients most. The success of this program will be measured by the feedback from the clients.

Setting up the course is another exciting part in this project. Based on the information from researches, we started to work on planning a course that might work the

best. Confirming the schedule and number of participants for every class, preparing equipment and course materials, figuring out a suitable teaching method, setup of the classroom, etc, are all the detail that we had to think of in the proposal. If we missed anything, more problems have to be handled when the course is actually run. So we needed to think attentively.

After the course started, the first challenge happened when the original target group did not attend the course. Since the target group changed, the goal and course materials of the course had to be changed. While the career-oriented idea was no longer fit into this course, we had to design the materials for every class again. Fortunately, the same group of participants did attend every class so we can move our focus to that population. By knowing their age and their life style, we would rearrange the course to relate the usage of computer to their daily life. The most interesting part was observing what skills they needed to improve through working with them individually. That gave us the basic idea on preparing or adjusting the materials for the rest of the course.

Teaching in the class with students in different level of learning ability was another challenge. Some of the students might learn slowly while the others learn fast. Besides, helping them to build up their self-confidence is also necessary for teaching kids. Especially teaching something entirely new for them, in our case using computers, we needed to start from the basic and easiest step. Also, we could not give something more difficult than what they can handle at the beginning. Challenging task could

stimulate their interests but it can be given only after they were familiar with the computers.

Another exciting part of teaching is to teach something we were familiar with. When I taught in the computer class, I could not mention any technical terms. It is hard for me to explain what I have learned into a simpler and more picturized way. That is very important for teaching, especially teaching kids.

Throughout the whole project, the most valuable experience is having the chance to communicate with different people. Besides getting to know more about this community, I can also work with different people having different working style. Through discussion, I can get another point of view from them and see a bigger picture of the same problem.

Recommended Computer Training Course in WYC

Summarizing the feedback and suggestions from the evaluations, we propose a revised computer training program. The preparation, the setup of the program and the teaching strategy are designed specifically for the members of the Worcester Youth Center.

Preparation

The preparation of the computer training program will be started by giving out surveys to all of the people in the Worcester Youth Center. The questions on the survey are similar to the assessment form. Instead of giving them out during the orientation, the members of WYC will be asked to fill them out even before the course materials are determined. The survey would be used to determine what the youth want to learn from the course, also the time that most of them will be available. At that same time, we have to contact the local high schools and find out what the students are learning at school. We can run the computer training program as an extension following the local high schools teaching sequence. On the other hand, we can avoid covering what they have already learned in school and let them explore something new. These two approaches fit different groups of students, therefore, the surveys are essential to set up the course materials. After gathering suggestions from the surveys, we should be able to come up with an outline of the course.

A mentor program, a newly designed program suggested by John Carnegie, should be started. Since the one-to-one tutoring ratio is the suggested ratio for a

successful training course, the idea of combining the peer leader program and mentor program is recommended due to the lack of teachers.

After the course materials are confirmed, peer leaders who would like to be mentors for this course will be trained first. This will give them time to practice with the computers and get familiar with the material covered in the course. Then the mentor group will be able to work with the students in the course and answer their questions when help is needed. In addition, the mentors can help recruit students for the class. Not only will the students learn more effectively, but the computer training program can also expand with more experienced mentors helping out in the program.

Besides the human resources, the equipment used in the course is also important. The teachers can explain the materials easily with a standardized computer lab. They can even teach some basic knowledge of the hardware level, hence the students actually benefit more. In addition to making the course more convenient for the students, regional transportation should be provided for those who live far away from the center. It also gives them a higher intensive to go to the class consistently.

Following up on students who dropped out from the course after they signed up is also important. The work has to be done in order to know the reasons and try to help them back to the course.

Course setup

Setting up the course to challenge and attract people to join, especially the high-risk population in the youth center, is not an easy task. According to Arrastia, some characteristics of the high-risk population need to be taken into consideration during the planning stage.

The first meeting with the high-risk youth, it is most crucial in terms of impressing them and keeping them interested. This high-risk population is not interested in school in general (see Table 1) therefore the instructor needs to inspire them in order to attract them. For example, the instructor can show them how to make money with computer skills. The instructor also needs to show the participants some daily life examples of how the computers have changed our lives.

Since most of the high-risk population will not be familiar with computers, the instructor should provide a brief class on basic computer usage like saving files, loading files, as well as the names of each part of the computer, et cetera. This class will help them to get up to speed and provide a foundation for their future classes.

The instructor should establish clear objectives for the students in each class. The most important objective for the instructor in each class is to motivate them to learn. Once the students have the incentive to learn, their learning experience will be much more fun and enhanced.

Like many other skills that we have learned, the best way to learn how to use the computer is through hands-on experience. The students should have more time to spend on the computer rather than listening to classes on how to use it. Arrastia's opinion is that in an hour class, even 15 minutes of demonstration is too long, especially for the high-risks in the youth center who have only very short attention spans. It is too demanding for them to pay attention for more than 15 minutes. The results of long lectures will not be as fruitful as shorter lecturing.

The course as a whole should be so structured in the form of a series of smaller modules covering more software packages to be taught. This idea from Arrastia has a more profound implication. Since the modules are short, the course can have constantly changing themes. While those who are already enrolled in the course can be inspired just to see how many different types of tasks a computer can do, those who are not enrolled will have a sense of constantly missed opportunities and hence they will seek to join the course.

Teaching

Teaching is the most challenging part in a course because it is a very dynamic process. The instructor must respond quickly to the reaction of students and keep their interest and attention. The objective of setting up a course is not for the instructor to teach, but for the students to learn. To help students to learn better, we suggest the following instructional techniques from research results (Brophy, 1986; Peterson, 1986; Stallings, 1980) presented in Table 8 in the Literature Review section of this report.

Firstly, class assignments must be achievable. The assignment should relate to class and closely relate to the class objectives. It should be a reinforcement of material covered, not a big challenge. For instance, when teaching the "cut and paste" function in Microsoft Word, we can ask them to do both "cut and paste" and "copy and paste". Also, the assignment should be completed within the class time frame. This allows the students to practice, and as they encounter difficulties the instructor can provide help and explanation.

Secondly, the teaching needs to be carried out personally and interactively. The population in the youth center is a population that seeks attention from others, but also, has a short attention span. Each of the students has a different educational background and a different learning pace. Therefore, personal instruction is needed, ideally the student-instructor ratio is not less than 2:1. The instructor needs to know how each student is progressing and provide extra assistance as needed.

In terms of interactive teaching, the instructor can ask questions that encourage students to participate. This interaction helps them understand the materials and keeps their attention. These questions need not be challenging. Actually, it may be more helpful to ask easier questions helping to build up the academic self-concept of the students, while arousing their interest to learn and keeping their attention.

Thirdly, the instructor can also use questions to check the students' understanding of the material. These questions provide some valuable feedback to the instructor. This can be used to adjust the pace of teaching so that the students will not be frustrated in class because they are lagging behind.

Fourthly, as we have seen in the Literature Review section of this report, many successful programs in high-risk youth settings involve breaking down the materials into small and redundant chunks. This technique constrains the instructor from overwhelming the students with too much material to learn. High-risk youth have learning difficulties (see Table 1 in Introduction). Therefore their ability to cope with material is comparatively less than other school children of their age. Through small and redundant steps, they can review a small amount of material constantly and therefore help them to master the skills.

An example of a method using small and redundant steps, is the "spiral" or recurrence approach in teaching. Instead of teaching the materials sequentially in class, the instructor can merge the materials together. During each class, all the topics are

reviewed with some in depth. For instance, the instructor can ask students to make a uniform table in the first class and in the next class, ask them to make a table with different column widths, et cetera. In this way, the students can review and practice the skills in every class.

Last, but not least, it is important to have high success rates on all the assignments, classroom questions, et cetera. High-risk youth particularly need encouragement. If small and redundant steps cannot give them success, they will be extremely frustrated and discouraged. A high success rate can build up their confidence and incentive to learn, thereby strengthening their academic self-concept. It can also keep their attention in class because they are gaining fulfillment through it.

Appendix

Appendix A: Schedule

November 1998

| S | M | T | W | R | F | S |
|----|----|-------------------------------|----|----|----|----|
| 1 | 2 | 3 First Meeting | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 Confirm Social Study | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 Confirm Technical Part | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 First draft of proposal | 25 | 26 | 27 | 28 |
| 29 | 30 | | | | | |

December 1998

| S | M | T | W | R | F | S |
|----|--------------|-------------------------------------|---------------------------------|----|-------------------------|----|
| | | 1 Discuss the first draft | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 Second draft of proposal | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 Amend- ment | 16 Power Point outline | 17 | 18 FINAL Proposal | 19 |
| 20 | 21 Flyers | 22 | 23 Open House | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

January 1999

| S | M | T | W | R | F | S |
|----|----|----|---------------------------------|----|----|----|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 Orientation Assessment | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 Class I | 28 | 29 | 30 |
| 31 | | | | | | |

February 1999

| S | M | T | W | R | F | S |
|----|----|----|-----------------|----|----|----|
| | 1 | 2 | 3 Class II | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 Class III | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 Class IV | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 Class V | 25 | 26 | 27 |
| 28 | | | | | | |

March 1999

| S | M | T | W | R | F | S |
|----|---------------------------|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 Write evaluation | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 Write procedure | 30 | 31 | | | |

April 1999

| S | M | T | W | R | F | S |
|----|--|----|----|----|----|----|
| | | | | 1 | 2 | 3 |
| 4 | 5 Write introduction & Lit. Review | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 Write appendix | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 Write Misc. & Recommend Course | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 First draft of complete IQP | 27 | 28 | 29 | 30 | |

May 1999

| S | M | T | W | R | F | S |
|---|--------------------|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 FINAL work | 4 | 5 | 6 | 7 | 8 |

APPENDIX B: Meeting Summary

Meeting Summary 1

Date : Wednesday, November 04, 1998
Time : 14:00 - 16:00
Venue : Memorial Health Center and Worcester Youth Center

This was our first visit to Cathy's office at Memorial Health Center. We discussed with her our proposal about documenting the success of the Worcester Youth Center (WYC) and studying the impact of the WYC on the Worcester youth in particular on education. She showed us some background information about WYC and we photocopied some of them.

In our visit to her office, we setup a weekly meeting time with Cathy and she also showed us the Resource Library in the Memorial Health Center which we could use for research.

Then we went to the WYC. We spent about an hour in the center. We met one of the peer leaders, Omedys, who will be our contact from WYC. We discussed on what we could offer for them. After some discussion, we found that providing basic computer training might be suitable. Omedys would discuss with other peer leader on what we could do.

At the center, we also met the director, Adolpho, who shared some of his experience with us about the youth center, the secretary Rebecca and also Marianna, the coordinator of the peer leaders. We would be visiting the youth center once a week from then on until the completion of our project.

Meeting Summary 2

Date : Wednesday, November 11, 1998
Time : 14:30 – 15:45
Venue : Memorial Health Care and Worcester Youth Center

Cathy was not available for meeting this week. We went to the youth center and met one of the peer leaders, Omedys. As John, one of the trustees of WYC, was not there, we could not get his opinion on setting up the computer club. However, Omedys gave us a suggestion which he had discussed with John before. They wanted the computer course to be more practical so that the youth were not just playing with the computer, but instead they could actually bring something back with them.

Meeting Summary 3

Date : Wednesday, November 18, 1998

Time : 14:00 – 16:00

Venue : Worcester Youth Center

Like last week, our scheduled appointment with Cathy was cancelled. We had an appointment with John Carnegie from the WYC, who was in charged of computer works in the WYC, however, a meeting suddenly came up for him and he cancelled our meeting. Later in the week, he sent us an email discussing our plans.

Also during the week, we met with Cathy and obtained some more information regarding our social studies. This included some statistics done on the Latino population in Massachusetts. We also decided that we would rely on email to correspond with Cathy from then on as this would be a more convenient and faster way of sharing ideas.

Meeting Summary 4

Date : Wednesday, December 2, 1998

Time : 15:15 – 17:00

Venue : Worcester Youth Center

Today was our first meeting with John Carnegie, one of the trustees of the Worcester Youth Center. John worked on a project for teaching computer skills to children in elementary school. He shared his experience of that project and idea on giving a more successful course to youth. Besides, he gave us some direction on the computer course that we could work on.

Concerning the computer course, we discussed about how to make the material more practical and interesting for the youth. For example, we may use some statistic of the basketball games when we teach Excel. Also, resume writing would be good for them to learn when they learn MSWord.

For promoting and sub-assessment of the course, one of the peer leaders is going to help us design the flyer for promoting this computer course. John is also going to invite some youth who regular go to youth center to join our course.

Meeting Summary 5

Date : Wednesday, December 9, 1998
Time : 15:00 - 17:00
Venue : Worcester Youth Center

This was the follow-up meeting of last week's. We exchanged our ideas with Mr. Carnegie on the In-take assessment form as well as how promotion and recruitment would be done. Also presented was Tut Liu, a peer leader in the youth center. He would be designing the flyers for us.

A working schedule from then on until the end of the course (not the project itself) was drafted during the meeting. Flyers would be put up in the youth center for 2 weeks. The youth center would have a Christmas Party on Dec 23 and it would also be the day for signing up. Upon signing up, there would be an orientation session, when those who signed up would fill in the assessment form.

After the meeting, we went to the Computer Learning Center at the Matheson Apartments. We met with Susan Gionet, the coordinator of the computer center. We set up an appointment with her on the following week for an interview.

Meeting Summary 6

Date : Wednesday, December 16, 1998
Time : 11:00 – 12:30
Venue : Matheson Apartments, Computer Learning Center

We had an interview with Susan Gionet, the coordinator of the computer learning center of the Matheson Apartment. This learning center was started in May 1998. They provide language and computer courses to the neighborhood. They have people joining their courses from different age, 5 to 72, to go to their class. They divide people by age into three different groups, 5 to 10, 11 to 18, 18 and up, in order to teach the course more efficiently.

The materials covered in the class for adult, 18 and up, is close to what we are going to teach in the computer course in the youth center. Susan shared her experience and method on teaching computer course in the learning center with us. She told us what we needed to be careful when teaching the course, especially, when we have youth who could not speak and write English well. It is an important point for us, as most of the youth in the Worcester Youth Center are Latino. Also, she gave us some of the product made by the people in their class. They gave us some new idea on how to set up the material of the class.

As John had another meeting came up suddenly, our meeting with him was cancelled. We contacted him by e-mail to follow up our promotion plan.

Meeting Summary 7

Date : Monday, January 11, 1999

Time : 17:00 – 18:30

Venue : Worcester Youth Center

The meeting today with Mr. John Carnegie, was mainly for the purpose of discussing the details of the orientation session on Wednesday, January 20, 1999. A list of potential participants was generated. The staff in the Worcester Youth Center would contact them on the phone to inform them about the orientation session and the course. The orientation session would basically be a time to let the participants know why we are organizing this computer course, the time and what they are going to learn in this course. Sign-up will also be done during the orientation session.

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