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STREAMING VIDEO FOR
PARENTAL INVOLVEMENT EDUCATION

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Instructional Technology

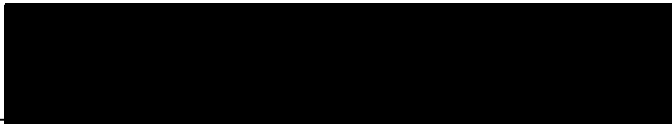
by
Ching-Ping Lin
September 2003

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ABSTRACT

Since 1969, the Internet has grown from four host computer systems to tens of millions. As our society steps into the technology age, a wholly computerized society is beginning to develop. Technology has already revolutionized our lives. The combination of education and technology has brought about unprecedented change in the educational field. With the emergence of new technology that influences every aspect of our lives, it also creates a change in the relationship between a parent and a child. One new technology that alters the relationship between a parent and child is video streaming.

This project was aimed to discuss the use of video streaming technology in education and how useful it would be to Kindergartens. At the same time, the project introduced the equipment needed to deploy streaming video, and how to implement. It also discussed the construction and security of streaming websites. To evaluate the efficiency of streaming video within children's education, the project was tested in a kindergarten in Taipei, Taiwan.

ACKNOWLEDGMENTS

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I would like to thank my friends who helped and encouraged me through the process of writing this project. I would also like to thank all my classmates for all the wonderful learning and life experiences we shared together. Many thanks go to my family for their understanding and support.

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CHAPTER ONE

INTRODUCTION

Background of the Project

The Role of the Internet in our Daily Lives

The invention of the Internet has created an invisible bond that further revolutionized the way we live our lives. The impact of the Internet on our daily lives can be felt by simply opening our eyes. The high-speed cables that connect us to the rest of the world prevalent in all aspect of our lives. The splint second transfer of e-mail replaces the pain staking process of writing letters and the lengthy tradition of waiting for letters to be transported by the post office. Instead of having the mailman knock on doors to inform the arrival of a new letter, now there is this nice pleasant voice in the computer that says, "You've got mail." With the development of streaming video as an addition to the Internet, we can now simply log on to Microsoft Net meeting and spend hours staring at those who we want to see instead of eagerly waiting for those few. Through streaming videos during the holidays, families now have the opportunity chance to see their loved ones who are unable to return home. From work, to home, the profound

affects that computers and the Internet have on our daily lives are endless.

Early Education in Taiwan

In Taiwan, early education is not compulsory education. As stated in a report of kindergarten by the Taiwanese Ministry of Education (Bureau of statistics, Ministry of Education, 2003) has indicated (see Table 1), every teachers give attention to an average of 11 students in private school and an average of 14 students un public schools. There are more private schools in Taiwan. Most parents would like to send their children to private school because private schools offer wider variety of classes such as English class and provide more tools and equipment to enhance the learning environment. In Taiwan, Children attend kindergarten at a younger age compared to children in the United States. The typical children in a Taiwanese kindergarten ranges from 3 1/2 to 6 years old. Because both parents are employed, most parents send their children to kindergarten quite early as an alternative means of childcare. Hence, early education is plays an important part in the process of children's learning and growing.

The Communication Problems between Parents and Teachers in Taiwan

In Taiwan, face-to-face interactions between parents and kindergartens teachers are rare. Most schools communicate with parents through traditional means such as telephones, mailing and home visits. The telephone has tremendous potential as a low-cost means of direct, two-way communication between parents and schools. Unfortunately, in the past, the telephone calls from the schools and teachers are infrequent and only brought bad news; such as the child had not completed his homework or has behavioral problems. Not too many parents looked forward to receiving these calls. The home visit is a unique form of communication between the parents and teachers/schools. However, it has not been an effective means of communication because it is not easy to arrange for such visits, especially if both parents were working.

Purpose of the Project

The purpose of this project is to develop a way of communication between school and parents. It aims to help parents to be more involved with their children's education. One of the main aspect and focus of this project will be an analysis of the use of "streaming video" and the roll that "streaming video" can and has

played in the Taiwanese education environment. Furthermore, this paper will also include some information on the streaming video hardware and software requirements as well as professional opinion and interview with parents, teachers and children on the effects of "streaming video" on the parent-child relation.

Context of the Problem

The context of the problem is to address the parents' demanding schedules. They do not have enough time to participate in their children's learning and educational. However, the Parent Website bridges this gap by providing the parents a means of communicating with the schools. Most importantly, streaming video has the special characteristic of real-time viewing over the Internet. This allows parents to see their children's activities in the classroom.

Significance of the Project

The significance of this project is that the security Parent website, specially, streaming video helps to reduce parental anxiety and increase communication between the parents and school. This is significant in many ways. The following discussion will include details about the benefits to both the parents and the school:

In Kindergarten, what are the Benefits to the
Parents using the Security Parent Website?

1. It helps parents participate and remain involved in their children's education. Parents will become more active and provide positive inputs regarding the education environment of their children.
2. The streaming videos component allows the parents to actually see their children's learning environment and how their child learns and reacts to various situations and interacts with teachers and other children. This allows parents the ability to understand their children even more.
3. By learning more about what their children's school day involves, parents will be able to talk to their children about their school day in more detail.
4. It also allows grandparents and other authorized relatives to watch the child learn and grow.
5. The email component provides a convenient, user-friendly means for communication between the parents and schools.

6. It allows parents to better understand the schools routines.
7. It also allows parents to view the school's updates, schedules and activities and other information regarding the school.

What are the Benefits to Kindergartens using the Security Parent Website?

1. The streaming videos will provide an open window to parents, which will help the parents feel more secure and confident about the school. It will also give parents a better understanding of the role the school has in their child's life. Therefore, some schools will be willing to adopt this new technology to increase parental confidence in and appreciation of the school.
2. It will allow parents to offer creative and important suggestions to the schools regarding their child's education.
3. Equipped with this new technology, the school will have an additional competitive advantage over other school that does not provide this form of communication and thereby increasing their appeal to the parents.

4. The Parent Website allows schools to communicate more effectively with the parents. It's provided a direct form of communication with the parent that can be updated constantly.

Assumptions

This project will only be installed in some private schools for the following reasons: First, generally speaking, private's schools have more monetary resources for technological hardware. Second, more and more ISPs are able to offer fast broadband, DSL and cable modem access at a lower price.

Limitations

1. Due to the increasing of schools' expenditure, only few private schools will be willing to provide this system. Therefore, this project won't be widely practiced in whole kindergarten.
2. Some parents who do not have computers at home or at work may have difficulty using a computer. For this reason, this new technology will fall short of its function.

Definition of Terms

The following terms are defined as they apply to the project.

Microsoft Net Meeting - it is a real-time multimedia communications tool for intranet and Internet users.

White board - it is an interactive, multi-user, shared communication tool.

Streaming Video - is a process in which audio, video, and other multimedia can be delivered live to anytime to any locations over the Internet or company intranet.

ISPs - Internet Service Providers (ISPs) are the companies that provide you with your Internet access.

DSL - this technology uses existing copper pair wiring that exists in almost every home and office. Special hardware attached to both the user and switch ends of line allows data transmission over the wires at far greater speed than the standard phone wiring.

Cable Modem - a modem designed to operate over cable TV lines. Because the coaxial cable used by cable TV provides much greater bandwidth than telephone lines, a cable modem can be used to achieve extremely fast access to the Internet.

Table 1. Summary of Kindergarten in Taiwan for the
2002-2003 School Year

Numbers	Grand Total	Public	Private
Schools	3,275	1,331	1,944
Teachers	20,457	5,363	15,094
Students	241,180	76,382	164,798
Classes	10,233	2,900	7,333

CHAPTER TWO

REVIEW OF THE LITERATURE

Parents Involvement in Education

All parents should be encouraged to participate and be involved in their children's learning (Mercedes, 1998). Some parents and families are able to be involved in their child's education in many ways. Others may only have time for one or two activities. Whatever parents level of involvement, whether at what level do parents involve children education, do it consistently and stick with it because parents will make an important difference in child's life.

What are the Benefits of Parent Involvement?

Children spend much more time at home than at school. Their parents know them intimately, interact with them one-to-one, and do not expect to be paid to help their children succeed (Peterson, David, 1989). The home environment, more familiar and less structured than the classroom, offers what Dorothy Rich (1985,p.72) calls "teachable moments' that teachers can only dream about."

There are many advantages when parents play an active role in the educational process.

- These benefits for students:
 1. Higher grades and test scores.
 2. Increased student attendance (Greenwood & Hickman, 1991).
 3. Better attendance and more homework done.
 4. More positive attitudes and behavior (Henderson, 1987)
 5. A decrease in the number of student dropouts (Haynes, Comer, & Hamilton-Lee 1989).
 6. Greater enrollment in postsecondary education.
 7. Observing a closer relationship between family and school (Epstein, 1991; Henderson, 1998).
- These benefits for parents:
 1. More confidence in the school authority.
 2. Teachers have higher opinions of parents and higher expectations of their children, too.
 3. Greater confidence in themselves as the roles of parents and in their ability to help their children to learn at home.

4. Greater likelihood that the parents will enroll in continuing education to advance their own schooling.

- These benefits for schools and communities:
 1. Improved teacher morale.
 2. Higher ratings of teachers by parents.
 3. Increase the school's understanding of the child (Smith, 2001).
 4. More support from families.
 5. Higher student achievement.
 6. Better reputations in the community.

(Henderson, 1994).

How Can Parents be Involved in Education

Parent involvement is a main component for student success. Parents can be involved in many and varied ways all contributing to the academic success of their child. It provides the many ways that parents can increase participation children's education.

1. Appropriate monitoring of television viewing and homework completion (Clark, 1993).
2. Visit your child's classroom. A visit will give you an idea of what child does at school and how he or she interacts with other children (Liontos, 1994).

3. Keep in touch with the school and children's teacher. Parents can directly notify about school-related activities.
4. Tutoring the children at home, home activities that can improve children's school learning.
5. Parents can be volunteering (Simich-Dudgeon, 1986). One of the better ways to have parents be involved in their children's education. Parents can help teacher in the classroom or lunchroom. As parents participate in these activities, they would have a better understanding of children's learning environment.
6. If children's school has a parents' Room or Parents' Center, sometimes parents can drop in to meet other parents and teacher there (SBE, 1994), exchange ideas or information about the process of children's learning and growing each other.

Hindrance

Children just beginning their school experience may be wary of the idea of parents and teachers talking about them behind closed doors (Clark, 1999). However, it is not always easy for working parents to find time and energy to become involved or to coordinate with schedules for

school events. For some parents, a visit to school is perceived as an uncomfortable experience (Patricia Clark Brown, 1989), because parents may feel uncomfortable about going inside their child's classroom, sitting in small chairs, and listening to reports of their child's conduct and class work (Clark, 1999). In addition, some of parents who are not uninvolved in school may lack of understanding the school system or lack of knowledge of how to help their child (Smith, 2001).

Streaming Video

The Definition of Streaming

Streaming is a way to view multimedia audio and video files in real time (Richard et al., 2000). Streamed data can be any information or data that is delivered from a server to a host where the data represents information that must be delivered in real time. This information could be video, audio, graphics, slide shows, and web tours, or the combination of all above.

What is the Streaming Video?

Streaming video means being able to watch a video as it is downloading so that people also called play as received. Using streaming video, people download small portions of a digital video file at a time from the

Internet, instead of an entire video file. It is considered streaming data into a computer. Then the video player is a temporary storage device that stores the stream data in (Weiser, 2002). Streaming media is a process in which audio, video, and other multimedia can be delivered live or anytime, anywhere over the Internet or company intranet.

Advantages

Due to the streaming video does not require a large amount of computer memory since nothing is permanently stored on the hard drive (Weiser, 2002). Hence, people be able to being downloading and playing the same time. By this reason, at present, streaming video is only live on Internet so that as deliver be able to control their copyright.

Parent Website

In recent years, the parent website is the new product that combines technology and education. That main function is reinforcing the school-family partnership (Coleman & Wallinga, 2000), because it breaks through the traditional way to communicate between parent and teachers. The advantage for teachers, it ease of modifying and distributing curriculum; ease of sharing information

and collaborating; reduced costs of printing and mailing manuals (Wagner, 1997). However, the parents website also help parents stay involved in their children's education by informing them of what is happening in classroom.

In fact, one benefit for working parents is most of schools closed at nights and on weekends however, parents website is open for twenty four hours, parents can anytime and anywhere to know the latest information about students and school.

CHAPTER THREE

DESIGN

Analysis

The primary objectives of this project were to keep families and schools connected and to aid in the communication between them. In other words, to help parents become more engaged in the education of their children. Most schools communicate with parents through traditional means such as telephones, mails and home visits. However, such communications could not promise parents a full realization and controls regarding what their children's activities at school. By applying this new technology, parents may see their children over the Internet while taking care of their career at the same time. Parents would no longer feel that putting their children in kindergarten is like abandoning them or not performing their parental duties. Doing so might build up parents' confidence and reassurance in both the school and in their children's social interaction at school.

This project was tested at a kindergarten located in Taipei, Taiwan. There were forty-three students, six teachers and one director in the kindergarten. The first step before deploying the streaming video technology was

to understand the participating parents' computer equipments and Internet connections. First, the participating parents were asked to fill out a questionnaire (see Appendix A). By filling out this questionnaire (refer to Table 2 for the result), people knew the criteria for deciding whether this technology is suitable in kindergartens.

Design and Development

This project consisted of two components: Its installation in the kindergarten and the deployment and the security of Parent Website. The design of each component follows.

1. System requirements and setup Installation: The first step was it introduced the system requirements and the process of setting up those installations.
 - a. Hardware:
 - i. Pentium 200 MHz class computer or higher
 - ii. Audio card
 - iii. Speakers or headphones to listen to the sound
 - iv. Video card
 - v. VGA monitor, with color set at 16-bit color above and viewing area set to 800x600.

- vi. Modem connection to the Internet at 56Kbps or higher.
- b. Software:
 - i. Windows 95, Window 98, Windows NT or higher.
 - ii. Realsystem iQ, Quick Time or Windows Media.
- c. The process of setting up those installations.
 - i. Five cameras were installed for this project. One camera was installed in each of the three classrooms. A fourth one was installed in the digital room and the fifth one was installed outside. The cameras installed were static cameras with no pans, no tilt and no zoom. The cameras were only on during class time. The cameras were normally turned off for privacy of the teacher when the students were not there such as break time and lunchtime.
 - ii. Those cameras were connected to an NT sever which and then delivered the streaming images to the Parent Website. This allowed today's busy parents to see their children over the Internet using a standard browser and Internet connection from any computer. Details of this part follows:

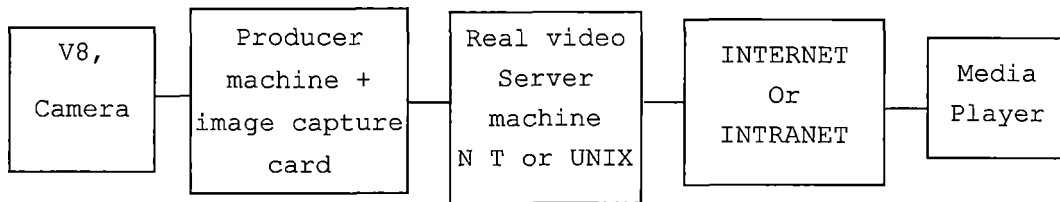


Figure 1. How to the Streaming Video Tranmit

2. Deployments and Security: Secondly, create and deploy the Parent Website for the kindergarten and the parents. For security reasons, the Parent Website was only accessible using specified passwords. Only authorized parents and users were assigned usernames and passwords and were able to log on the system (APPENDIX B.1). They were able to log on any time of the day and see their children through the streaming component of the Parent Website. The streaming site provided parents the ability to watch their children in the display box live (see Appendix B.2).
 - a. Structure of the security and Parent Website.

The tools used to develop this part were Microsoft FrontPage, JavaScript and Media Player.

 - i. Parent Website: A brief introduction of the kindergarten and provide a communication way for parents and teachers.

- ii. Password Protection: Entry into the secure Parent Website may only be gained by valid username and password. These are only issued after the school verifies the parents' identity and other information. Strangers and solicitors attempting to enter the Parent Website can only enter once it receives authorization from a school employee. In addition, every class has one password that was changed monthly to keep the Parent Website secure.
- iii. Software: The major component of the project, the streaming video site, was created using Media Player and then exported as web pages (.htm). Via the screen, parents were able to "join" their children's real-time activities.

Implementation and Evaluation

This new technology would be demonstrated and published to the WWW. The school and parents could realize the benefits of streaming video from the live demonstration.

The participants of this testing included six teachers in three classes and forty-three students aged from 3 and 1/2 to 6 years old from three classes. In

addition, parents of the children were also in the group. The evaluation consisted of two parts: observation and survey.

1. Observation:

Participant A:

Six teachers

Participant B:

Forty-three students

Participant C:

Parents of the forty-three students

Observer:

Ching-Ping Lin

Phase One: The first observation was occurred in the first week of setting up the system. The observer observed the teachers, parents, and the students in various environments. Please refer to Table 3 for the record of the observation.

Phase Two: The second observation was done six months later. Please refer to Table 4 for the record of the observation.

2. Survey:

In the survey section, the survey was displayed on the message board component of the Parent Website. Parents

can also send their comments to school via emails. This allowed the parents to complete the surveys anonymously so that the parents will feel more comfortable and willing to reveal their feeling, ideas and suggestions. This was considered an important aspect of the project because the feedbacks provide an opportunity to make improvements to the Parent Website. Please refer to Table 5 for the record of the feedbacks.

Findings

The whole testing and observation process took six months in total. Beginning the testing, parents questioned about the streaming video. After explained and coordinated by the teachers, parents realized the benefits of this equipment. During the observation, there are seventy percent of parents using the equipment and most of positive feedbacks from parents.

Table 2. The Analysis of Questionnaire

Questions	Answers	Result
Computer availability at home or work	Yes	37
	No	5
	N/A	1
Computer hardware	Desktop	35
	Notebook	10
	N/A	1
CPU type	PENTIUM II	6
	PENTTUM III	20
	PENTTIM IV	4
	K-6	1
	K-7	1
Internet available at home	N/A	11
	Yes	27
	No	13
Type of connection	N/A	5
	Dial-Up	14
	Cable modem	5
Online training necessary	ADSL	12
	N/A	7
	Yes	0
	No	31
The streaming video in the classroom necessary	N/A	12
	Yes	34
	No	6
	N/A	3

Note: Check all that apply.

Table 3. First Time Observation Record

Teachers	<ol style="list-style-type: none"> 1. The performances of their teaching were affected. 2. Teachers complained that the technology put additional stressed on time. 3. Most of teachers need to construct their confidence in teaching.
Students	<ol style="list-style-type: none"> 1. Appeared interested and attentive. 2. Performed better since they were aware that their parents might be watching.
Parents	<ol style="list-style-type: none"> 1. Parents had more questions for the school.

Table 4. Second Times Observation Record

<p>Teachers</p>	<p>The time of shooting was shortened responding to teachers' feedback. Owing to the reason that camera was on only during class hours, teachers did not complain as much about the lack of privacy. However, with this new technology, teachers were able to receive positive feedback from most parents, which made them regain confidence in their teaching abilities.</p>
<p>Students</p>	<p>Increase their interest in learning and they were more obedient, because they thought that their parents were watching them.</p>
<p>Parents</p>	<p>After the director explained the function of using the streaming video, misunderstandings were reduced between parents and teachers.</p>

Table 5. Feedbacks Record from Parents

1. It's amazing to see her interact with other kids.
2. If I missed her during the day, I can pull her up (on the computer) and see her.
3. This is a good way to help parents understanding their children. However, I still have some confusion since my child is receiving special education and I don't want other parents hold particular attitude to her for this reason.
4. I appreciate the sense of security the system gives me, as well as the ability to pull up the Parent Web site and check on my daughter.
5. I like the idea especially when I was watching my little girl learning wonderful new things.
6. It is nice for me to know that my son playing and learning but some parents use it to compare their children with other kids and it might have bad influences on those kids.
7. It was great to able to see my daughter during the day when I am at work.
8. It gives me the piece of mind to know that my kid really is ok during the day, and that he is receiving the services they tell me about. In addition to my benefits, it gives my family members around the globe an opportunity to see my kid everyday. The most precious gift has been allowing my Mon in Canada to see him. She only gets to see him in person once a year. However the system gives her the opportunity to bridge the gap and see him everyday
9. Real time viewing of activities is excellent. The more eyes watching the better we feel.
10. It makes me more efficient at work, knowing I can peek in on my son at any time to be sure he's having a good day. My son loves it when I pick him up and say, "I saw you playing on the cameras today!"
11. It is a great way to stay connected with my son while I am at work!
12. It's a pity that I cannot access to the Internet at work and take advantage of this new technology.
13. I feel good at work because I know my kid is safe and happy.
14. This is good idea; it lets me have a chance to grow up with my little boy. It also provides me with a better understanding of his learning problems.
15. My wife and I both work out the town; therefore, we cannot spend as much time with our children. Through the Parent Website, I am able see and learn more about my kid learning progress.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Children don't come into the world knowing the difference between right and wrong. Children's mind is pure as white paper, however parents are, as it were, a painter. If it will be a perfect finished product, the painter won't be slack at his duties. Thus, the parent's involvement in the school becomes essential for the optimum develop of children (Click, M & Click W, 1990); this is especially true in kindergartens.

Parents and school represent the primary environment in which children grow and develop. However, in today's busy society, streaming video is apropos coming to break through traditional way to help parental involvement in education. During the testing time, parents questioned a lot about the streaming video. However, after explained and coordinated by the teachers, parents realized that the equipment helped them to know more about how their children learn and interact with other students at school. In addition, streaming video also worked as a communication channel between parents and teachers.

In the whole process, appreciate for parents' approval, encouragement, and school support and suggest improving this project.

Recommendations

As this project was designed suitable for developing the relationship between parents, children and teachers in environment of education. However, Similarity, as an extension to such methods, the process of teaching has moved beyond the traditional method of passing knowledge between a teacher and his students. Many schools and education institution offer tele-commute or Internet courses for people who are unable to attend the actual course at the school. That mean is the virtual classrooms instead of the conventional classrooms. As long as students can get to a computer connected to the Internet, keep up with their work even if they're busy during the day. School is always in session because is always there. In the future, to pass knowledge won't limit by time and distance.

APPENDIX A
SURVEY FORM FOR UNDERSTAND THE PARTICIPATING
PARENTS' COMPUTER AND INTERNET

Questionnaire

For parents:

1. Do you use computer at home or at work?

Yes No N/A

2. What kind of computer do you use?

Desktop Notebook No Computer

3. The system specification of your computer:

PENTTUM II PENTTUM III PENTTUM IV

K-6 K-7

4. Do you use the Internet at home?

Yes No N/A

5. How do you connect to the Internet?

Dial-up Cable modem ADSL (DSL)

6. Is online training necessary?

Yes No

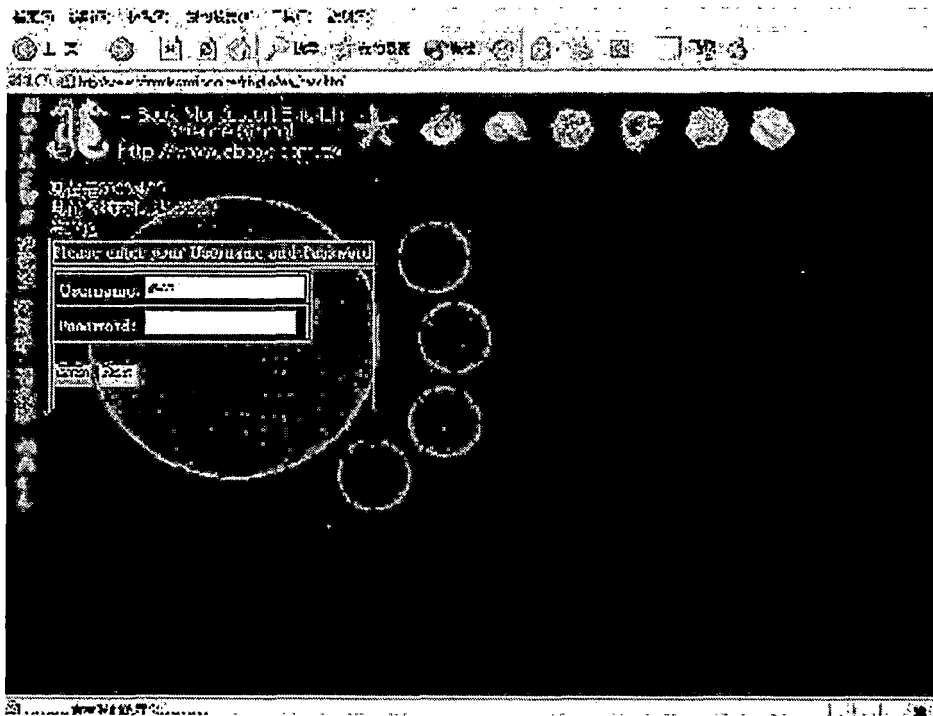
7. Is setup the streaming video in the classroom necessary.

Yes No

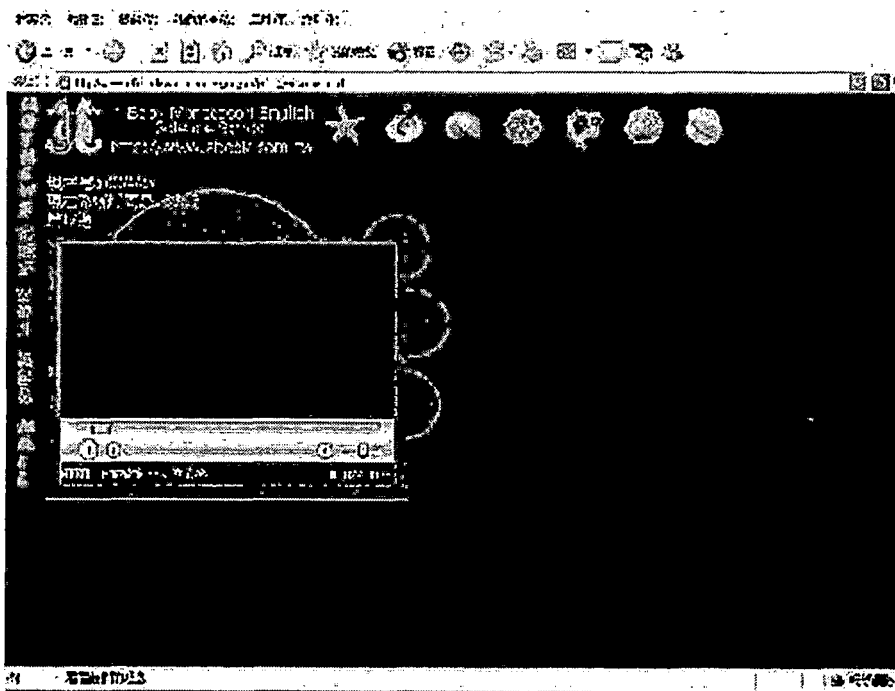
APPENDIX B

THE SECURITY SITE AND THE STREAMING SITE

B.1 The Security Site

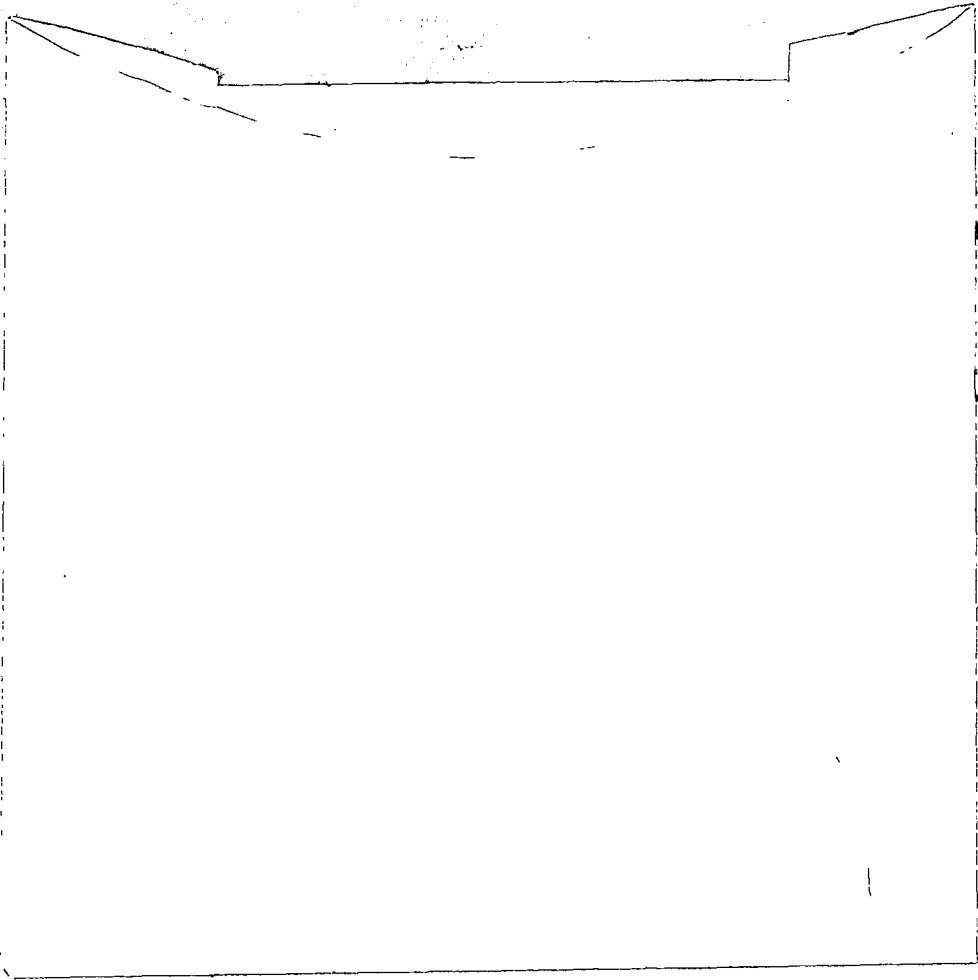


B.02 The Streaming Site



APPENDIX B
CD OF PROJECT

• 3000 (17712) 1000



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