

*Original Article*

## Examination of an Instructor Created CD-ROM in an EFL Classroom

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The use of multimedia in the EFL classroom has spread with the growing use of computers in schools. This is illustrated by the increased number of CD-ROMs marketed for the ESL-EFL classroom. However, in some instances, to present more relevant material, it is necessary for instructors to develop their own multimedia software. This paper examines how such software was created for a junior college course in American Popular Culture. Through the use of a student questionnaire and instructor observations, the effectiveness of this CD-ROM is evaluated and recommendations for changes are offered.

**Key Words:** CD-ROM, Pop culture, Multimedia

### Introduction

Educational CD-ROMs have been successfully used in language classes for more than a decade. It has been demonstrated that they can help increase student motivation and engagement levels (Schacter 1999). Some believe that the time spent on task is longer when using CD-ROMs and multimedia. The decision was made to create a CD-ROM based text for a course in American Popular Culture after searching to no avail for an appropriate text which would include the major events and figures for the latter half of the twentieth century and considering the positive implications of using technology to enhance student involvement. This paper will discuss what steps were taken in the authoring process, objectives in using the CD-ROM, its application in the class, the effectiveness of this delivery method and lessons learned from the entire process.

Although much has been written concerning the use and effectiveness of pre-packaged CD-ROMs in education there is little research material regarding instructor created, course specific software of this type. One reason for this lack of material is found in this quote, "On the other

hand, it costs a lot of money to produce a top-notch CD-ROM. This fact alone has deterred many would-be software moguls from making their own CDs and has virtually eliminated programs written by real classroom teachers." (Gordson 2001). In this particular case financial costs were low as all the necessary hardware and software were already on hand. The time invested in researching material and developing it into a CD-ROM, however, was considerable. The few reports available were helpful in providing an overview of team software development projects but these were on a larger scale and at a much higher cost than an individual instructor can hope to undertake.

In "Development of an Interactive, Multimedia CD ROM to Teach Medication Administration to Undergraduate Health Professionals" by Jeffries, McDaniel and Vaughn one can find a comprehensive guide to planning, creating and testing CD-ROMs produced by individual teachers and faculty teams. The Center for Instructional Development and Distance Education at the University of Pittsburgh provides a good look into the steps taken to produce a faculty authored CD-ROM for a course in Health Assessment Development.

“You Are Here”—A Checklist for Implementing Web-Based Activities by Tom March offers a brief but good list of things to consider in using web based activities in classes. “Evaluation Standards and Criteria for Technology Implementation”, written by Gilbert Valdez of NCREL, provides important information on the evaluation process for measuring the effectiveness of technology use in the classroom. This was helpful in designing the questionnaire given to students in this class. There are numerous software evaluation forms to be found on the WWW; many produced by school districts and universities. It is recommended that these be used to evaluate any software used in an instructional setting.

The CD-ROM was created ‘by hand’ using B.B Edit software and HTML coding. In order to provide audio and video resources for students Real Producer was used to create sound and video files. Adobe Photoshop 5.0 and Graphic Converter 3.7.1 were used for adapting graphic files. After extensive research and background reading, the text portions of the book were written. In effect, it was a self-contained web site with hypertext links to the WWW. Interactivity was provided through the many internal audio and video links found on the CD-ROM, photo and sound galleries as well as linked internet sites. The text had Japanese characters for translation of vocabulary that was thought to be too difficult for the learners. For those not comfortable with coding by hand the same results can be obtained by using any of the commercial WYSIWYG products such as PageMill, Netscape Composer, Front Page, etc.

The first step in the actual authoring process is to create a storyboard to reflect the intended design of the book. At this stage steps must be taken to assure that navigation from any one page to others is easy to achieve and consistent throughout. The design of individual pages must also be consistent to avoid confusion on the part of the user. Locating suitable photographs and drawings to accompany the written text proved to be a time consuming task as once the materials are found, letters must be written to gain permission to use any copyrighted works. Since this CD-ROM was intended for free distribution to class members only and was to be returned at the end of the course, permission was relatively easy to obtain in most instances. It also is good protocol to ask for permission for any web sites that are linked from the disc. For music files copyright laws allow for the reproduction of 30 seconds from any licensed recording although there is currently a gray area concerning copying of complete

songs. With the advent of writeable CD-ROM discs made especially for audio files, it is uncertain whether or not the pre-paid royalties included in the purchase price would apply to this type of project. When in doubt it is best not to include any questionable copyrighted material.

### Goals in mind when creating the CD-ROM

- ◆ to stimulate motivation and interest in the course material through interactivity with the text and the WWW.
- ◆ to improve students’ computer skills by having them use computers more often.
- ◆ to give students a general overview and understanding of American pop culture over the last 50 years.
- ◆ to provide students with an opportunity to explore areas of personal interest in more depth, within the framework of the lessons, while using the target language.
- ◆ to limit time spent reading the text in class, thus permitting students to devote class time to viewing relevant videos, doing independent research and sharing and discussing information.
- ◆ to have time to work more with students individually since the class is open to all first year students whose English skills span a wide range.
- ◆ to convince as many students as possible to use e-mail or word processor files to submit assignments; to have them type more in English.

### Application of multimedia in the course

- ◆ In many classes students were given either individual or partner assignments in which they selected a particular person, event, film, etc. mentioned in the text and searched the internet for relevant information about their choices. In some classes just listing of a number of facts from different sources was sufficient. In others they were required to make a written summary of their findings. In both cases the results were usually shared in small groups. There were many hypertext links within the lesson text to provide starting points for searches. Students had to cite the URL and Web site name along with information found there. This was done to encourage the referencing of sources since this is often overlooked in Japanese schools.
- ◆ Some assignments involved cloze listening practice using audio files on the disk. Listening tasks using

video clips and music were incorporated into homework and classroom activities.

- ◆ Students were assigned a weekly reading from the CD-ROM and a weekly written assignment to check comprehension of the readings. Both were to be done outside of class.
- ◆ Students viewed documentaries and other videos to better understand American popular culture. They sometimes viewed an entire movie pertaining to the topic for that week. For example, we watched "The Long Walk Home" when studying the Civil Rights movement. When videos were shown attempts were made to ensure that they had captions in either English or Japanese so they would be better understood. In

some cases students were required to compare what they discovered about life in America with corresponding situations in Japanese society. For example, they were asked to discuss discrimination in Japan at the end of the Civil Rights lessons.

### Evaluating the effectiveness of this delivery method for the class

A student questionnaire was completed after the eighth week of a 14 week semester and again after the course was completed. The questions and answers were given in Japanese and administered anonymously in order to provide more reliable results. The answers are based on

Table 1 after the 7<sup>th</sup> week

	yes	no			
1) Do you have internet access at home?	25%	75%			
	yes	no			
2) Have you used a CD-ROM in class before?	15%	85%			
	5	4	3	2	1
3) Do you like the CD-ROM better than a paper text?	15%	15%	55%	10%	5%
4) Do you enjoy using multimedia on the CD-ROM?	40%	35%	25%		
5) Do you use the CD-ROM outside of class?	5%	5%			90%
6) Do you submit homework by e-mail?	10%	5%			85%
7) Do you like the use of extra audio and video in class?	25%	30%	25%	10%	10%
8) Do you learn anything new and interesting from the videos?	15%	35%	25%	15%	10%
9) Do you often visit links from the CD-ROM to the WWW?	35%	15%	20%	15%	15%
10) Do you find anything new and interesting when you visit the linked sites?	25%	20%	25%	15%	15%
11) Do you enjoy collecting information from the internet?	5%	20%	25%	15%	35%
12) Do you learn interesting and new things from other students, site visits?	15%	20%	30%	20%	15%
13) Would you like to use a CD-ROM text again in the future?	20%	30%	30%	10%	10%

Table 2 after the 14<sup>th</sup> week

	yes	no			
1) Do you have internet access at home?	33%	67%			
	yes	no			
2) Have you used a CD-ROM in class before?	100%	0%			
	5	4	3	2	1
3) Do you like the CD-ROM better than a paper text?	20%	13%	47%	20%	
4) Do you enjoy using multimedia on the CD-ROM?	26%	60%	14%		
5) Do you use the CD-ROM outside of class?	7%		13%	13%	67%
6) Do you submit homework by e-mail?	40%	13%	40%	7%	
7) Do you like the use of extra audio and video in class?	60%	27%	6.5%	6.5%	
8) Do you learn anything new and interesting from the videos?	20%	33%	47%		
9) Do you often visit links from the CD-ROM to the WWW?	27%	20%	33%	20%	
10) Do you find anything new and interesting when you visit the linked sites?	36%	21%	14%	29%	
11) Do you enjoy collecting information from the internet?		13.5%	53%	20%	13.5%
12) Do you learn interesting and new things from other students, site visits?	6.5%	20%	27%	40%	6.5%
13) Would you like to use a CD-ROM text again in the future?	27%	6.5%	47%	13%	6.5%

a Likert scale of 1-5 with 5 representing the most positive response and 1 the least; 20 students of 21 took part in the first survey. The follow-up survey was conducted by mail after the class was completed. Only 15 of 19 students responded. Two students had left school between the first and second survey. The tables below represent the results.

The fact that 85% of the students from the first survey had never used a CD-ROM in a class before and 80% would like to do so again is significant. This indicates the concept itself was a success and that the students enjoyed this method of educational computing.

One of the difficulties in using the CD-ROM material in this class was the disparity in students' reading levels. The fact that 50% gave a less than favorable response to question #11 while 70% answered positively to question #10 in the first survey suggests that the reason is the difficult language presented on English language sites. It is interesting to note that only 33.5% in the second set of results gave a less than favorable response. This could be interpreted as showing that the student reading levels improved during the semester. With only 25% initially having internet access it was difficult for students to use e-mail for assignments so 85% submitted handwritten homework. Perhaps the most noticeable improvement was that by the end of the course over 90% of the class were successfully using e-mail for these assignments and all had attempted to do so. This was a goal from the outset.

Use of the CD-ROM outside of class doubled from 10% to 20% during the second half of the semester. This was a welcomed improvement and as more students obtain access to computers outside of the class this figure should improve in future classes. The positive response toward the use of additional audio and video selections in class grew from 80% to 93.5%. This can be attributed to two factors; improvement of students listening skills and the use of only subtitled videos in the second half of the course.

My expectations were too high and my assumption that all had learned basic computer skills in another class was not valid. They all had a class in basic computer skills that included e-mail and word processing but evidently not all students were able to master the skills necessary for this class. This may be attributable to the fact that most of their previous keyboarding work was done in Japanese.

By the fifth week it became apparent that many

students were finding it difficult to use computers outside of class. After that, 45 minutes of class time a week was devoted to reading from the CD. This accounts for 25% of the weekly class time but it appears to have had a positive effect on student interest and participation in class. In addition, everyone was assigned a permanent partner. Higher level students were paired with lower level students. The results were positive with noticeable improvements in confidence on the part of both partners. Of course, they could use their first language to assist each other when necessary but most did not.

Problems of a different nature plagued us from the outset. There were far too many server errors requiring students to log off and on. Sometimes it was necessary to reboot the system and even then access was not always possible; students lost motivation and valuable time was wasted. At times the Real Player software did not function properly. The causes of these problems remain a mystery. Connection rates slowed down considerably when all students were online simultaneously.

Incorporating this new technology in the class was a challenge for both the students and instructor. Students needed to adapt to a new learning style where it was necessary to collaborate with class members, use keyboarding skills and think more conceptually. An occasional problem was dead links. CD-ROM based links can become outdated quickly and anyone considering a project of this sort should bear this in mind. Student motivation was high at first but then dropped sharply until permanent partners were assigned. For the most part the students felt much more comfortable using computers and the internet by the end of the course. Students improved in using search engines to locate information and skim the results to check only the most relevant pages listed.

Although they now know a number of shortcuts and have learned to bookmark when using the browser and they save their work periodically while in progress, they still are not completely comfortable with typing in English. Overall I believe this was a positive learning experience for the majority of students. This is born out in the answers to the open survey questions where they were able to write freely. Examples of these responses can be found in the Appendix A.

### **Lessons learned from this experience**

One lesson learned quickly is that any material created needs to be proofread and tested thoroughly by a number

of people. During the course a few typos and two bad links were found. They had been overlooked in the testing phase. In revising the CD-ROM a link should be added on each page to enable students to return to the course syllabus page from anywhere in the text. Adding a search mechanism on each page, to allow students to search for names, dates, places, etc., would provide students with a helpful time saving device.

In the future pairing of higher and lower level students should be established at the beginning of the course. This will help students to understand the text and develop a sense of responsibility. Realizing that the partner and the entire class relies on their contribution makes for a more productive atmosphere and increases student awareness of responsibility.

Future editions will be more closely analyzed to insure that the vocabulary better matches the class level. The amount of material on the CD-ROM should be reduced as there is too much to be covered easily in the time available. By including so much content on the CD-ROM the initial idea was for a more asynchronous learning process to take place outside of class but this may be too much to ask of these students as many do not have access to computers outside of school. With so much material available on such a broad subject, a limit must be recognized and adhered to. One has to know when to stop. Student feedback was an important factor in reaching this conclusion (see Appendix B).

A very important lesson learned is not to assume that because a student has taken a computer class that he/she necessarily possesses the skills needed to use the CD-ROM effectively. In the future the first few classes should be spent on checking the keyboarding abilities of the individual students and addressing any problems found. The efficient use of search engines and directories should also be taught in more detail at the outset.

I would recommend that any teacher contemplating creating their own CD-ROM for class use be fully aware of the amount of time and effort involved in such a project. It would also be beneficial if the language levels of students as well as their knowledge of computers were available beforehand. With that said, I encourage others to experiment and develop such software as it is a challenging and rewarding experience for both instructor and students.

## Appendix A

"I was able to learn to send reports by e-mail and that is good."

"I learned a lot about American culture."

"It was interesting to see history from different perspectives."

"I can learn things in my own way."

## Appendix B

"There was too much information. Focus on a few themes in more detail."

"Tired to cover too much in one class."

"Too much to read. I felt I worked on assignments all the time."

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