

Utilizing video streaming technologies for English e-Learning presentation tutorials

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English has become an indispensable medium for active participation in international settings. In higher education, especially in university, teaching academic English ability such as presentation skill is an important issue. At Keio University, Shonan Fujisawa Campus, we are developing the methods to improve presentation skills in English based on application of technology such as video recording technology. In this study, we have utilized video streaming technologies for English tutorials. Ten students with intermediate English skill, who were planning to present at an international conference were selected as participants. Feedback on abstract writing and presentation skills were given by the instructor using desktop video recording system. Then, a survey was administered to the participants to see the educational effectiveness of using the system for English education. This article first describes the system. Second, it discusses the tutorial procedures. Then, it presents the result of the survey. The result shows that using the desktop video streaming technologies enables effective tutorials of English communication.

Keywords

e-Learning, desktop recording, English online tutorial, High definition streaming video

1. Introduction

English is an indispensable medium for active participation in the international settings. Not only most conferences are held in English, but also academic articles are usually published in English, making academic English skill important than ever. It should also not be ignored that much of high quality research done in non-English speaking countries often go unpublished in English journals due to its unsophisticated English writing skill. It is often argued that developing countries suffer unbalanced knowledge flow, because they import more knowledge products from other countries than they export (Altbach, 1978). Japan, although considered an industrialized country, also suffers from such trade imbalance. This is largely due to the role that language plays in the “global patterns of distribution of knowledge” (Altbach, 1978).

We as educators must also prepare our students for

the information age when technologies advance rapidly and old knowledge acquired may not necessarily be of much importance, in near future. What becomes increasingly important is for students to utilize technology and to communicate new knowledge to a wider community. At Keio University, Shonan Fujisawa Campus (SFC), we are developing an English curriculum that allows students to use English for productive purposes such as communication and presentation. As part of English education, we prepare graduate students to deliver presentations at international academic conferences.

To enhance learning experience of learners, we are searching for new ways to utilize new technology in the field of e-Learning. We believe that in developing e-Learning curriculum in English, both technological infrastructure and educational content need to be developed. In other words, in considering how to effectively use technology as a platform for language teaching and learning all aspects of technological application as well as English learning needs to be addressed.

The purpose of this study is to explore the possibilities of the next media and technology for its further in-

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tegration into language learning framework. A pilot study was conducted to investigate the feasibility and effectiveness of using video streaming technologies to support academic English presentation tutorials. Individual English tutorials were given by an English instructor to students at Keio University. Presentations delivered by students were video recorded digitally at the university. Next, an English instructor created feedback digitally with comments on grammatical errors, formal English expressions, and pronunciation. All correspondences were done on-line. After the tutorial sessions were over, survey was conducted to evaluate the effectiveness and usefulness of the on-line tutorials.

First, this paper gives the description of the technology we used. Then, it briefly explains the procedure in which the on-line tutorials were conducted. It then discusses the survey we have administered to the participants who completed the on-line tutorials. Finally, consideration on the application of video streaming technology to English presentation tutorial is discussed.

2. Technological Application

We have utilized a PC desktop recording system to record video contents of students' presentations and the instructor's feedback for tutorial sessions to facilitate students' English presentation skills. The advantage of using this technology is that it allows instant creation of digital video contents. In this study, students' presentations along with their Power Point slides were recorded by using the system.

The instructor can edit a student presentation video to add comments and give feedback in writing. Feedback can be directly written on the Power Point slides and video screen of student presentations using a pen tablet. The digital video contents with instructor feedback are saved on the video streaming server and are accessed on-line by the students. All the digital contents created were recorded using high definition XGA quality.

2.1 System Description

The system we are developing allows creation of digital contents by using three PCs: student's PC or instructor's PC, the mixing PC and the recording PC. The system instantly records the presentation on student's PC or instructor's PC as a streaming video file.



Fig. 1 Mixing PC and the recording PC

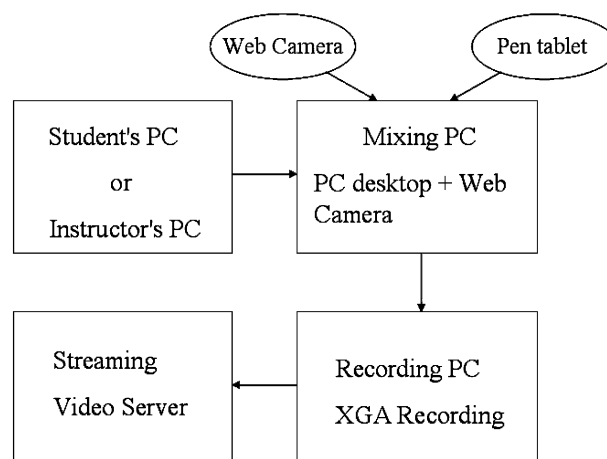


Fig. 2 Structure of the system

The video file is then saved onto the streaming video server. The interaction between the instructor and the students saved on the streaming video server can be retrieved on-line. Figure 1 and 2 show the image and structure of mixing PC and recording PC. The system we are developing allows creation of digital contents by using three PCs: student's PC or instructor's PC, the mixing PC and the recording PC.

2.2 High definition video and the access to video streaming materials

The system that we are developing can record all movements that occur on the screen as well as sound in the student's PC. Because it is possible to record in a high resolution of XGA, the appearance of detailed images can be recorded without any deterioration in image quality. The contents of the handwriting drawn

on the screen by using a pen tablet can also be digitalized. The format of the video files is WMV (Windows Media Video). The average size of a file is about 500Mb for one-hour recording. By distributing streaming video on-line, the recorded video can be seen by a wide audience simultaneously.

3. Procedure of the study

In this study, ten graduate students who are preparing to present at an international symposium received on-line English tutorials from their instructor. The on-line tutorial session lasted from July 15, 2005 to August 24, 2005. The students who participated in the study were all non-native speakers of English with intermediate proficiency. All participants were doctoral students at Keio University, Graduate School of Media and Governance. The students were selected for this study since they were all preparing to present their research in English at an international workshop called "Ubiquitous Media and Social Infrastructure" held on August 26, 2005 at Stanford University. Therefore, the participants needed to practice giving presentation in English on a real occasion.

The level of the participants' English skills was intermediate. Many participants were aware that their proficiency in English is not very high. Each participant interacted with the English instructor in three different stages: 1) delivering presentation using Power Point slides which were individually video recorded and streamed on-line, 2) sending an abstract written for the Conference Proceeding to the English instructor via e-mail and 3) accessing the instructor's digital video on the presentation and abstract on-line.

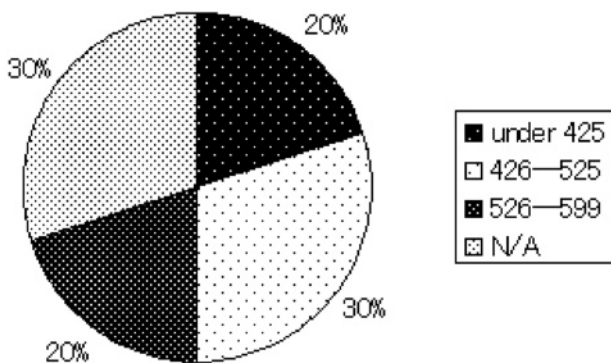


Fig. 3 TOEFL Score of participants

4. Stages of instruction

The following is the brief description of the procedure of the on-line tutorial. The participants prepared 20 minutes presentations with Power Point presentation slides on their research topics. Presentations were individually recorded using the PC screen recording technology previously described. They have also created Power Point slides to accompany the presentation.

After all the participants' presentations were recorded in the video streaming server, participants wrote abstracts of their presentation in English that would appear in the conference proceeding. Each participant wrote a one-page abstract using Microsoft Word, as shown in Fig. 4 and was individually sent to the English instructor for grammatical correction via e-mail. The following shows an example of the abstracts created by the participants.

After the English instructor gave feedback on the abstract, she received digitally recorded video files of participants' presentations using Power Point slides. Figure 5 shows the example video file that was created and sent to the instructor.

The instructor watched the content of each video files. She then, added feedback to the original presentation video files, which was also recorded using the video streaming technology. As the instructor watched and played the original video files on a desktop computer, she made comments on the presentation by stopping the video temporarily and made correction onto the corresponding Power Point slides.



Fig. 4 Example of corrected abstract

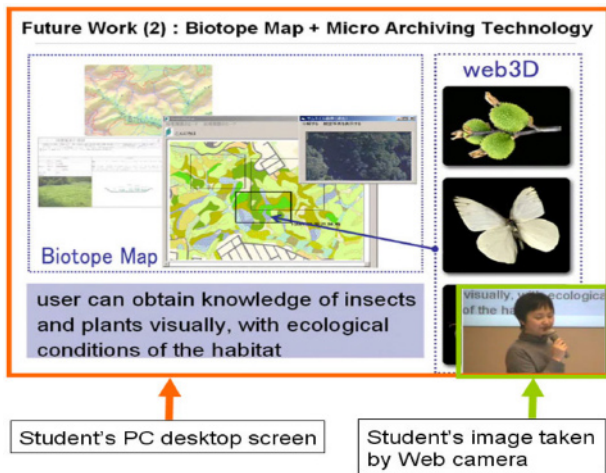


Fig. 5 Student presentation video file

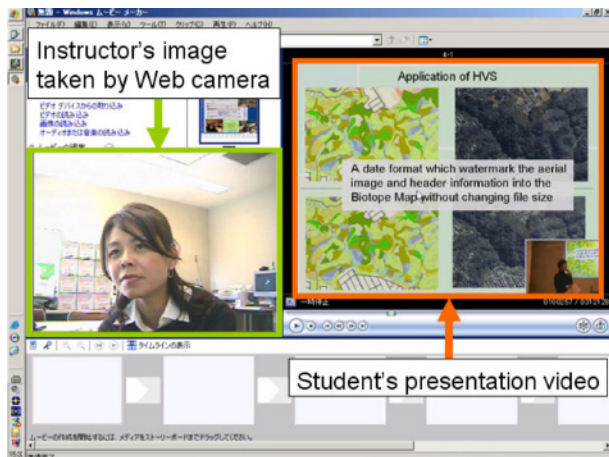


Fig. 6 Presentation video feedback content

The instructor's comments of the individual presentation files was recorded using the video streaming technology. Fig. 6 shows the actual digital video feedbacks that were created.

The instructor gave feedback using an instructional approach often called English for Specific Purposes (ESP) which focuses on teaching the functional aspect of language in specific genres. For example, in this case, emphasis was given to teach English skills needed to successfully communicate in an English speaking formal situation, such as an international conference. For instance, the difference between formal versus informal verbs, such as "get" versus "receive" and "gonna" versus "going to" were mentioned. These are some examples that show how different use of a verb is appropriate in a more formal situation compared to a more informal one. The English instructor gave feedback in the following areas:

Feedback Categories of English Communication for Specific Purposes

1. Appropriateness
2. Clarity
3. Formal vs informal expressions
4. Functional expressions
 - Argumentativeness
 - Presentation
5. Grammatical correctness
 - Appropriate phrases
 - Parallelism
 - Redundancy
 - Spelling
 - Tenses, agreement and time
 - Use of articles
6. Length of messages
7. Organization of information
8. Pronunciation
9. Rhetoric

The feedback contents were recorded and made available as a streaming video file for participants to watch at home. Figure 7 shows the sample presentation feedback that was created by the instructor. The instructor wrote the correction on the recorded Power Point presentation by writing on the screen using a pen tablet.

Again, the feedback contents were made available on-line for participants to watch at home. Together with the video contents of presentation and instructor's abstract feedback, the participants received the corrected Power Point slides and abstract from the instructor via e-mail.

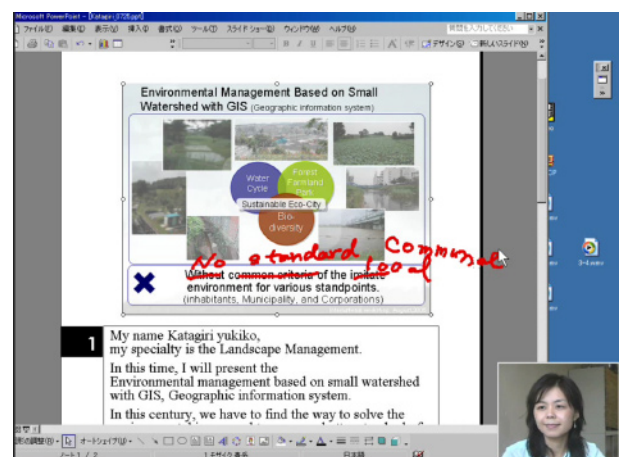


Fig. 7 Power Point feedback content

5 . Survey evaluation

We have administered a questionnaire to see the effectiveness of the presentation tutorial and usefulness of the video streaming technology to the ten graduate students who have participated in our study. The first section of the survey asked how effective the tutorials were to the students. The second section asked on the usefulness of the technological application. .

In the first section of the questionnaire, out of five Likert-type answers from [1] “not effective at all” to [5] “very effective,” we received [4] or [5] for all the answers. The result is shown in Fig. 8.

In the second section of our questionnaire consisted

of questions with regard to the technological application as shown in Fig. 9.

However, there were some problems with video quality and connectivity. Most participants had difficulty watching the video file from home as shown in Fig. 10. We think that it will be more effective to improving connectivity is more important than high quality recording.

However, many participants commented that having facial images of the instructor along with the audio feedback of their tutorial session is helpful as shown in Fig. 11.

Therefore, we think that while connectivity is important, tutorial feedback should also include video of instructor giving feedback.

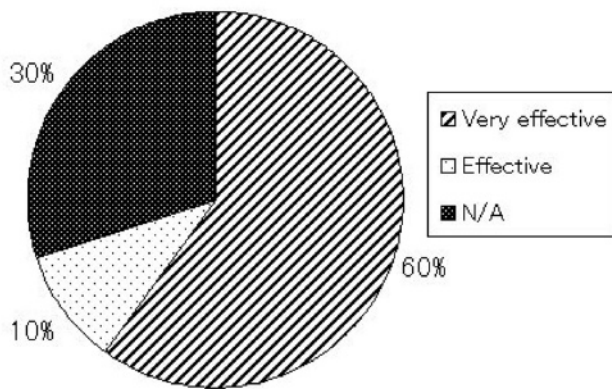


Fig. 8 “Is instruction using video effective?”

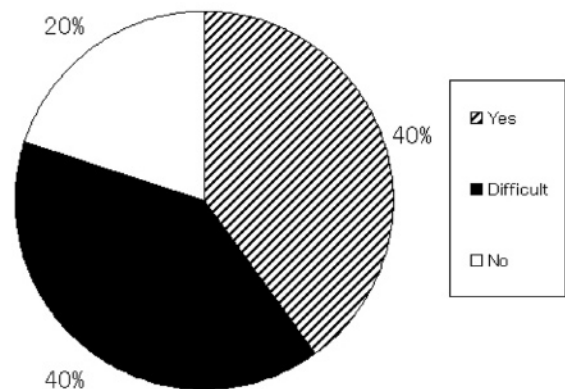


Fig. 10 “Can you see the video from home?”

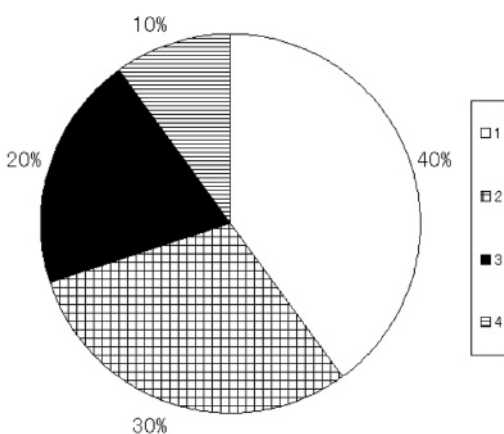


Fig. 9 “How many times did you see your correction video?”

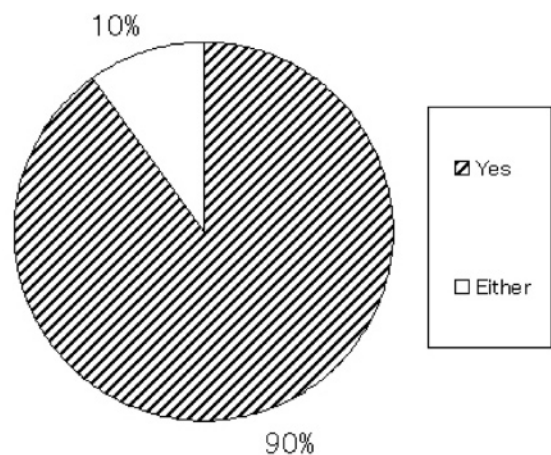


Fig. 11 “Should there be the image of instructor’s face?”

6. Advantages of e-Learning in English Education

In considering how to effectively use technology as a platform for on-line language learning, educators should consider what aspect of technological application is most effective. In this study, the instructor gave feedback on student works by creating digital video contents. There are a number of advantages in using the video streaming technology for individual online tutorials that are not possible in more traditional script-based or face to face individual tutorial sessions.

First, giving feedback through digital video content allows the students to replay the feedback to listen to the comments as many times as they want. Usually, in a face-to-face tutorial session, verbal feedback is not recorded. Second, by using the digital video system, the students received not only verbal feedback, but also written feedback to the participants' Power Point slides, enriching the traditional literacy based feedback with verbal information. Another advantage is the spontaneity of synchronous face-to face interaction. The students were able not only to listen to their own pronunciation, but also, to listen to the pronunciation given by the instructors which were recorded over to the original presentation video. Finally, all interaction between the instructor and the students can be recorded, which include the original student presentation session and the verbal and script based feedback given by the instructor added on to the original digital content.

7. Conclusion

In considering how to effectively use technology for on-line language learning, all communicative mode of technological application needs to be considered. For instance, communication consists of different mode, such as audio, visual, and literal and semiotic modes. By using the high vision digital video system instructors were able to give verbal, visual and script-based feedback to students' Power Point slide along with the video recording of students delivering presentation. The participants of the study watched the recorded

feedback video content a number of times for self study purposes.

The study showed that the instant creation and replay feature of the digital video recording technology can be a powerful tool for English teaching.

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英語プレゼンテーション指導に於ける ビデオ録画システムの教育利用

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現在、大学英語教育に於いて、国際社会に積極的に参画する為のスキルである、英語を自由自在に使う能力の育成が重要視されている。慶應義塾大学湘南藤沢キャンパスでは、発信型の英語教育を重視している。国際学会で英語のプレゼンテーションを行う能力の育成も発信型英語教育の一部である。本研究では、次世代メディア実証実験に基づいた英語教育方法の開発を行うことを目的に、遠隔ビデオ録画システムの応用実験を行った。国際学会で英語プレゼンテーションを行う予定の、中級英語学習者10名の博士課程の学生を対象に、段階的に遠隔で個別指導を行い、アンケートによる指導効果の調査を行った。学会発表に必要なアブストラクト、及び練習用に学生が作成した英語プレゼンテーションのビデオファイルを、遠隔ビデオ録画システムを活用し英語教員が添削を行った。尚、作成された、添削ビデオはストーリーミングビデオでウェブ配信を行った。本文では、遠隔ビデオ録画システムの概要、英語の遠隔指導内容、そしてアンケート調査結果について述べる。ビデオ録画システムを使用することにより、従来では困難である、英語コミュニケーションの指導を遠隔で行うことが可能となった。

キーワード

e-Learning、遠隔ビデオ録画システム、英語オンライン指導、ストーリーミングビデオ

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