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研究課題名（和文）　国際発表技術学習のためのマルチメディアを利用した教材開発と効果

研究課題名（英文）　On the Development and Effects of Multimedia Contents for Studying International Presentation Skills

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研究成果の概要（和文）：　本研究では、国際発表技術を紹介するマルチメディアコンテンツ（教材）と CAI（ドリル、学習記録、記録バックアップ）を開発し、信州大学工学部の英語プレゼンテーション授業等の教員と学生に使用してもらった。学会発表の申し込み、発表資料の準備、発表練習、発表当日の心得について内容を分け、ウェブ配信のために設計した今回の内容をコースウェア配信用サーバで公開している。動画による説明はわかりやすいので評判が良いが、様々な種類のオペレーティングシステムプラットフォームやブラウザの表示問題が生じ、コンテンツをよりシンプルなレイアウトに作り変え、また視聴覚障害をもっている学習者のために教材、ドリル、試験にテロップなどの工夫を加えた。

研究成果の概要（英文）：　In this project, our goal was to create online courseware for teaching presentation skills to engineering students by pooling the learning resources available on campus – English presentation teachers and trainers, actual students presenting at international conferences – and showcasing examples of how engineers apply these lessons to real presentations.　We used multimedia authoring tools to generate the contents and combine them with student testing and logging elements to create a completely open online courseware package for students to learn technical presentation skills and watch how others learned as well.

交付決定額

（金額単位：円）

	直接経費	間接経費	合　計
２００６年度	1,400,000	0	1,400,000
２００７年度	600,000	180,000	780,000
２００８年度	800,000	240,000	1,040,000
２００９年度	500,000	150,000	650,000
年度			
総　計	3,300,000	570,000	3,870,000

研究分野：　マルチメディアと教育
科研費の分科・細目：　科学教育・教育工学、教育工学
キーワード：　授業学習支援システム、英語（発表技術）、マルチメディア教材開発、e-learning

１．研究開始当初の背景

Engineering work is becoming more globalized and engineering students need to be aware that they will need skills beyond the basic technical education to be successful. One of the most valuable and most desired of these is presentation skills.

Many engineering majors at Shinshu University (Nagano, Japan) have had English presentation classes in their curriculum since 2002, but it is usually a number of years before students have a chance to apply this skill in a real situation.

However, speaking opportunities (international conferences, collaborations with foreign researchers, etc.) often happen on short notice - and it is very difficult to prepare and successfully deliver a technical presentation using only old class notes.

In this project, our goal was to create online courseware for presentation skills to support ESL speakers when the opportunity comes to speak about their work to an international audience.

２．研究の目的

To construct a complete courseware package, we needed to combine the visual contents with a system for generating tests, exercises, and student activity logs to support the learning mechanism. Our objective then became two-fold:

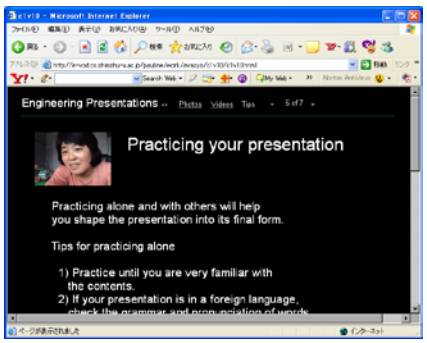
(1) To create college level "Technical Presentations" courseware using multimedia techniques to innovatively capture and deliver the experience of actual engineers practicing the concepts.

(2) To develop the supporting tests, exercises, and student activity logs called computer-aided instruction (CAI) for this type of course

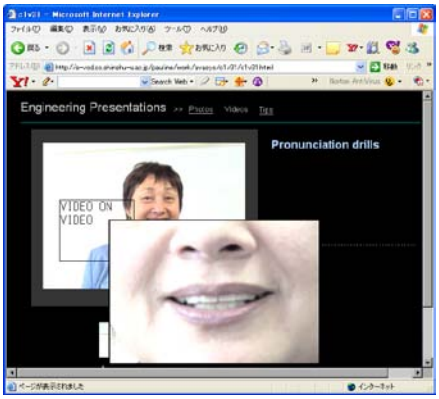
３．研究の方法

To create an effective multimedia courseware package for use in class groups as well as in self-study, the first objective was to keep the organization of materials very simple and easy to navigate. Using a combination of text, photos, and videos, we built: 1) a collection of short lessons on presentation skills and 2) examples of individuals applying the lesson concepts to actual presentations.

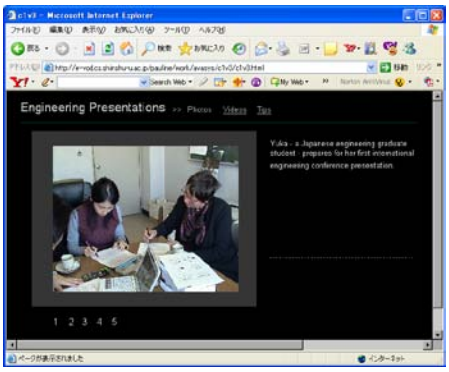
In a cooperative effort with Epson Avasys Corporation, we developed the courseware contents using their i.ADiCA multimedia authoring tool to generate the courseware contents which can be viewed at: http://sakura.cs.shinshu-u.ac.jp /pauline/work/avasys/c1v3/c1v3.html. Each unit begins with a short 15-30 second introduction video to help students understand the purpose of the reading lesson. We also used video clips when an actual demonstration of techniques helps to clarify specific points:



By utilizing a unique feature of the i.ADiCA authoring tool, we were able to create various mouse-over and mouse-click areas in our multimedia contents which can be used to provide additional details and explanations to help students understand the material.



A photo section in the courseware shows the various stages of preparation and practice and explains the steps involved:



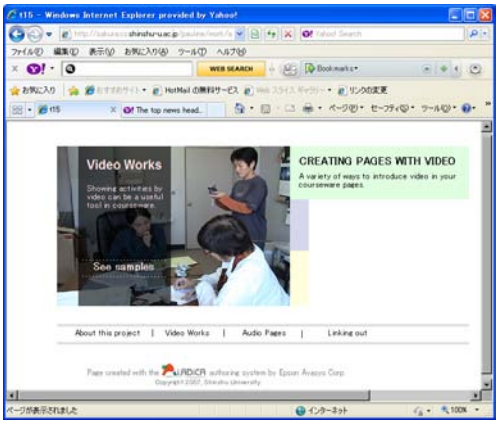
４．研究成果

In this work, we developed courseware to help Japanese university students learn how to prepare presentations for an international audience. The contents were designed to be used not only in a classroom setting, but also in a self-study format for students ina distance learning program.

From 2006, we developed the multimedia contents and computer aided instruction (CAI) drills and test system for this courseware and students and staff from English presentation courses at Shinshu University as well as students preparing for presentations at international research conferences gave us valuable feedback about the usefulness of video and multimedia contents in learning how to practice presentation skills.

We constructed the multimedia contents using an authoring tool and used the web conversion function to produce a version that could be shared on a web server and viewed with a Windows Internet Explorer browser. User feedback on earlier versions indicated to us that a little over half of the users were using operating systems and browsers that were not Windows or Internet Explorer and about 40% of them had problems displaying the multimedia web pages correctly so we had to simplify the layout of the courseware and provide a modified version of the contents for these users.

We introduce the characteristics of the multimedia contents and describe the authoring methods we used at: http://sakura.cs.shinshu-u.ac.jp/pauline/work/avasys/t15/t15.html.



５．主な発表論文等

（研究代表者、研究分担者及び連携研究者には下線）

〔学会発表〕（計　３件）

① Yuichiro Yoshinari, Pauline N. Kawamoto (Turning Teaching Ideas into Real E-learning Solutions: Development of a Remedial English E-learning System for Undergraduate Students at a Japanese University), HIC Arts and Humanities, 2009.1.10, Honolulu

② Yuichiro Yoshinari, Pauline N. Kawamoto (Development of a Spiral Learning Mechanism for E-learning

Drill Systems: Making Remedial Training Less Painful for Students and Instructors), E-Learn 2008 World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, 2008.11.20, Las Vegas

③ Pauline N. Kawamoto, Yasushi Fuwa, Hisayoshi Kunimune, Etsuko Iwama, and Juriko Tanaka (Work in Progress: Sharing Learning Resources in the Development of an Online Engineering Presentations Course), 36th Annual Frontiers in Education Conference, 2006.10.31, San Diego

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