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Procedia Social and Behavioral Sciences 1 (2009) 1239–1243

Procedia
Social and Behavioral Sciences

World Conference on Educational Sciences 2009

Designing feedback to support language acquisition using the ingenio authoring tool

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Received October 23, 2008; revised December 25, 2008; accepted January 6, 2009

Abstract

The increasing demand for high quality innovative foreign language teaching and learning materials led the CAMILLE R&D Group at the Universidad Politécnica de Valencia (Spain) to design a completely online language-independent authoring tool and content manager to allow teachers from around the world to design and deliver tailor-made online courseware that would suit their learners' needs and which could be immediately modified or updated according to particular needs. This system is known as the *InGenio* System and comprises four modules: the authoring tool, the delivery platform, an online tutoring system and a module to allow authors to adapt their materials into different support languages. This paper aims to describe the specific functionalities that are embedded in *InGenio* designed to integrate specific feedback to support language acquisition in the language courses designed with the *InGenio* authoring tool.

Keywords: Learning and content management systems; dedicated authoring tools; e-learning; computer assisted language learning (call); feedback; language learning.

1. Introduction

The increasing demand for high quality innovative foreign language (FL) teaching and learning materials has no doubt influenced the fact that language teachers have had to develop new skills in CALL materials design. Although many language specialists are still reticent to develop their own materials using dedicated authoring tools, it is the changing understanding of methodological approaches to language learning that has driven the need to offer the FL teaching community a robust web-delivered authoring tool.

This has been the goal underlying the most recent work carried out by the CAMILLE R&D Group at the Universidad Politécnica de Valencia (Spain); the creation of a web-delivered language-independent Learning Management System which integrates its own authoring tool capable of managing databases on a remote server and allowing language teachers from around the world to design and publish materials to suit their students' particular

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doi:10.1016/j.sbspro.2009.01.221

needs. The implementation of the materials has been based on the template approach to software authoring with templates that integrate video, graphics, audio and text. The project is known as *Proyecto InGenio.*

Besides having designed the authoring tool, a "content manager" has also been developed to allow language specialists to create a database from which to share materials. This content manager organises the multimedia components and the materials according to predefined specifications (e.g. language, level, skill, etc.) and delivers the contents in the form of a completed online language course. In addition, a Learning Environment offering courseware for learners of Catalan, English, Czech and Slovak has also been produced.

When designing multimedia courseware, the first thing that has to be established after the subject requirements, language content, language level and learning needs of our target group have been determined, are the general courseware features. We may wish to design materials for completely autonomous learners, in which case we should include as many tools as possible in order to support self-access learning (by providing reference materials, additional explanations, further reading, student assessment, etc.) or more tutor-guided materials in which, in addition to those mentioned above, we may think of including tools that will support the instructor, such as a teacher's guide, detailed student assessment reports, tracking devices, etc.

One of our basic aims when designing multimedia materials should be to provide the learner with all the necessary tools that will encourage the acquisition of knowledge as well as stimulating language awareness in order to enable him or her to discover the intricacies of its use with the aid of the programme. To achieve this, it is crucial that the design specifications of the programme are as detailed as possible.

Since one of the advantages of multimedia technology is the computer's immediate response to a mere touch of a key or mouse click, this is very useful when dealing with feedback in reaction to the learner's performance in completing an activity or exercise. Learners, we have observed, tend to find it encouraging to read or to hear immediate positive feedback when they have completed an exercise successfully. A considerable variety of positive or negative text, audio or text plus audio messages should appear/be heard at random and should be graded according to learner achievements. In a number of exercises feedback can be programmed depending on the number of attempts and a specific score given to each of these. We should include appropriate feedback for a "correct answer", a "partially correct answer", an "incorrect answer", or even exercise-specific feedback when a combination of options is required in order to complete an exercise successfully. Negative feedback, of course, has to be meaningful. It should always be clear what kind of mistake has been made and the feedback should provide not only awareness as to where the mistake lies, but also how to improve the learner's performance. Wherever possible we must avoid abrupt statements such as "No", "Incorrect, try again", but instead provide corrective feedback and try to anticipate and predict our learners' behaviour when completing an activity.

Simple activity-based progress reports or more elaborate student assessment reports are of great value for both autonomous learners as well as for tutors intending to supervise their students' work. A simple scoring device indicating the number of correct answers out of a total can become a challenge that some students find motivating. In addition to the scoring device, we may choose to include a chain of score-dependent comments also aiming to encourage the learner to continue advancing through the materials. Because students, we have observed, are very keen on testing themselves and enjoy the challenges of being given a time limit, another useful way to monitor learner performance is to create activities that are time dependent. These activities are especially suitable for entry and achievement tests. A choice of time limits can also be given for a set number of questions in order to provide different levels of difficulty (Gimeno 2002).

Consequently, one of the most important achievements of the *InGenio* project lies in the fact that the system and its registered tutors are able to access all the activities carried out previously by a specific student, including reviewing answers given for each question, and identifying and correcting mistakes. Using this information, tutors can correct, assess and take part in the students' learning process and provide any necessary additional support. To this end, the *InGenio* System automatically corrects activities where the materials writers have established all the possible solutions to a given activity and provided specific feedback, thus allowing students to self-assess their progress (De Siqueira 2007).

The following section will refer to the specific features programmed into the *InGenio* system to allow materials writers to include corrective feedback into the courseware.

2. Feedback

As pointed out by Heift (2006) "study results indicate that learner access of context-sensitive 'help' differs significantly with respect to feedback, exercise type, and language proficiency", therefore because *InGenio* as an authoring tool has to cater for a large diversity of target languages and levels of language acquisition, a system had to be designed and implemented which would provide meaningful feedback for the learner –both intrinsically and extrinsically–, a dynamic channel of communication between the tutor and the learner and, above all, a predefined template that would allow content providers to include a rich variety of corrective feedback to support language acquisition (Gimeno 2005).

InGenio therefore integrates feedback at three different levels; a) at authoring level, i.e. within the exercise templates to enable language specialists (content providers) to design appropriate feedback for the courseware activities; b) at student level, i.e. ways in which a learner can gain feedback from the courseware to achieve self-assessment; and c) at tutor level, which enables tutors to provide personalised feedback through the *InGenio* learning environment.

2.1. At authoring level

InGenio allows authors to adapt feedback to the different possible answers provided by a learner by means of a specific form for each activity (Fig. 1), specifying appropriate messages measured by rate of efficiency (Fig. 1) and by each answer given in each item (Fig. 2). In addition, the system also includes a utility that allows the exercises and corresponding feedback to be translated and adapted into any number of L1s.

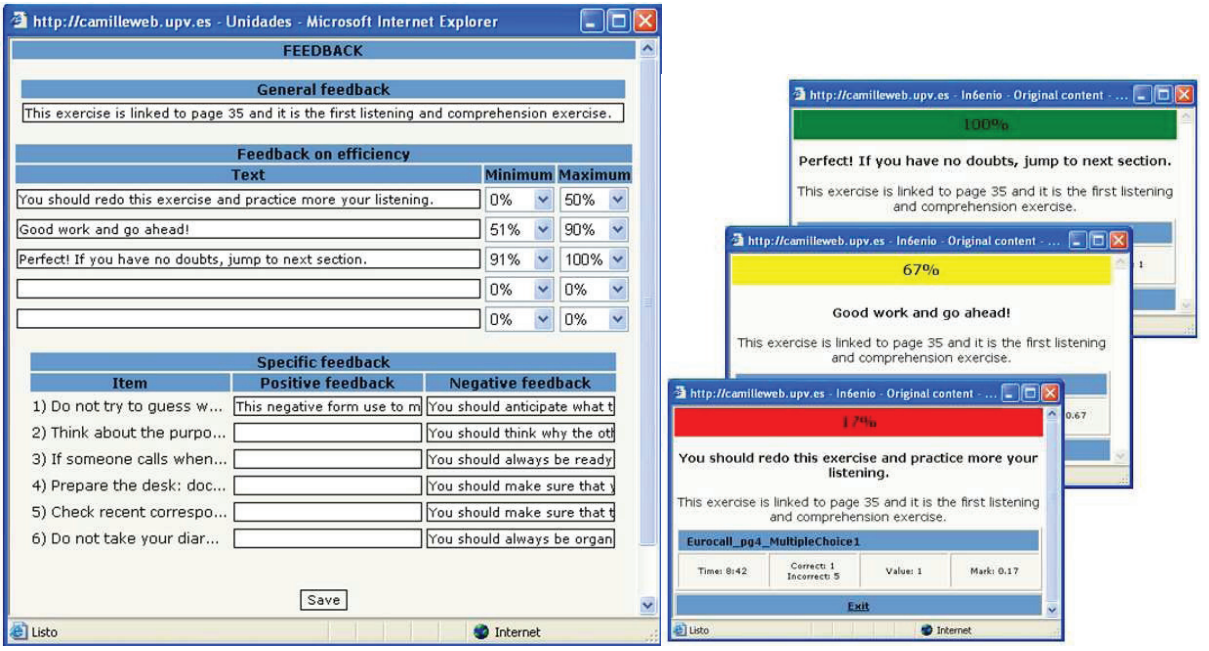

Figure 1. Author feedback form and feedback measured by rate of efficiency.

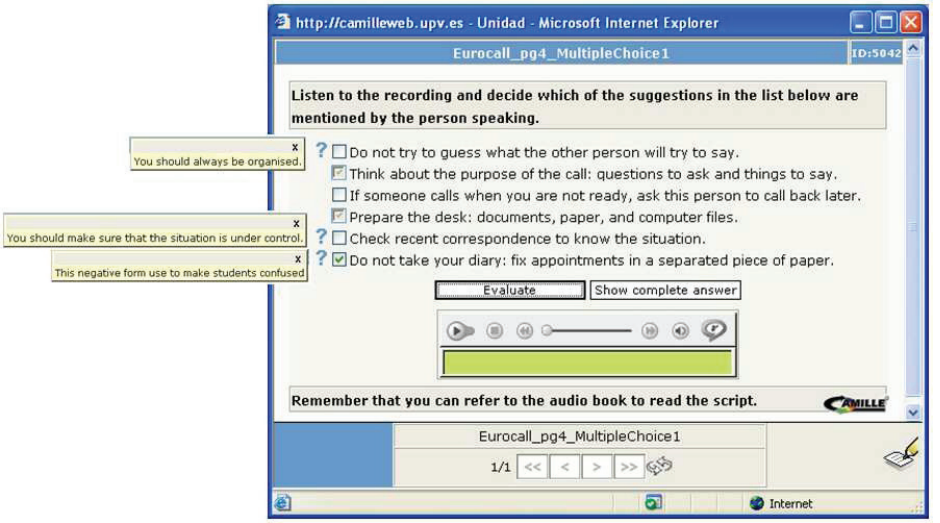

Figure 2. Feedback by item.

2.2. At student level

Students and tutors are able to review different assessment reports with information on all the activities, including number of correct and incorrect answers, in order to obtain specific feedback regarding their learning progress. In Fig. 3, there are examples of three different reports for a student of the *InGenio Intermediate Online English* course: 1. the list of students with basic assessment information; 2. the global report with each student's progress with generic assessment information and a list of all the activities undertaken and marks achieved; 3. the activity report with specific information about each exercise such as total time spent, date, rate of efficiency, as well as specific data regarding a given exercise.

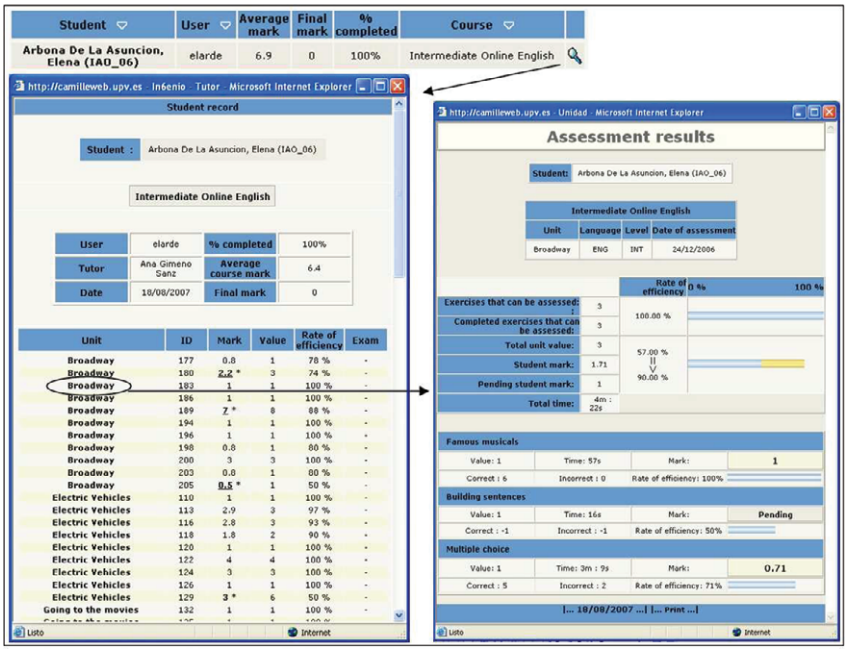

Figure 3. Assessment reports.

2.3. At tutoring level

Tutors have a variety of *InGenio* functionalities to correct and evaluate exercises providing specific feedback. They are able to view the assessment reports previously mentioned and also review the learner's answers in any given exercise, both correct and incorrect, but we would like to point out the tools used to correct, evaluate and provide feedback for each open input exercise. Figure 4 is an example of a template used by tutors to review and correct an exercise where students have to write open texts. In a similar way, tutors are able to review and evaluate files edited and uploaded onto the system by students, such as word documents, audio or video files. On an exercise's assessment report, students receive appropriate personalised corrective feedback together with the mark obtained and a message provided by the tutor where the correction, instructions and others remarks can be specified.

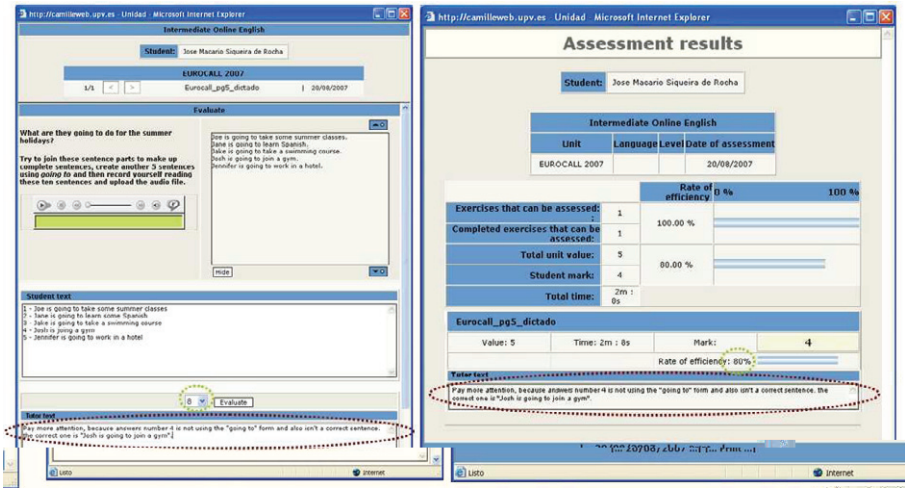

Figure 4. The tutor's feedback.

3. Conclusions

The *InGenio* system, developed by the CAMILLE R&D Group, consists of four interrelated modules, i.e. a dedicated CALL authoring tool to design and publish online language courseware; a learning environment to deliver the *InGenio* courseware; a tutoring facility to enable registered tutors to assess their learners' performance and progress, mark their work and provide personalised feedback; and, lastly a translation tool to allow any of the *InGenio* courses to be adapted into any number of source languages. In this paper we have referred to the authoring tool where materials writers can provide specific feedback for each and every item contained in an exercise or simply make use of the predefined random feedback comments that appear upon completion of an exercise. Each of these random comments relates to the learner's achievements in completing an exercise and provides guidance oriented towards supporting the learner in his or her acquisition process. In addition, the tutoring system includes a number of reports to facilitate learner assessment which include general information such as time spent in completing an exercise, number of correct and incorrect answers, a total mark, etc., as well as more content-specific information such as open input passages written by learners which can be marked by the tutor and feedback provided to help the learner better understand where and why any mistakes may have been produced.

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