Decide, Design, Develop and Evaluate: Computer-Based reading lessons for ESL learners

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Abstract

The quality of any CALL material can be assessed by looking at the methodological approach and the theoretical and pedagogical principles behind its design. This article describes the theoretical principles, design, and evaluation of computer-based reading lessons tailored to supplement an ESL reading course at College of Languages & Translation –King Saud University. The Ivers & Barron (1998:20) model was adopted in designing the material. The model is described as DDD-E: Decide, Design, Develop and Evaluate. An in depth discussion of the development and implementation of the computer-based reading lessons is presented where stages of the CB reading lessons implementation are discussed, including new tasks, design elements, layout and various learning resources. The article also describes the evaluation process which involved think aloud sessions with 8 participants. The CALL material described in this article was designed to supplement the freshmen’s ESL reading course. The lessons were to be used in a blinded learning environment, i.e. combining face-to-face instruction with computer-mediated instruction. The Ivers & Barron (1998:20) model was adopted in designing the material. The model is described as DDD-E: Decide, Design, Develop and Evaluate. It provided a systematic and reliable approach for instructional design. It has been used successfully in many multimedia projects as it has the flexibility to adapt to new educational technologies (Ivers & Barron, 1998; Ivers, 2003).

1. Decision stage

Many researchers agree that in order for CALL to be effective it should be integrated into the course structure with direct relation to the objectives of the course. According to Decoo (1992:55) there has to be a correlation between the software and what the students are studying, therefore, it was decided to adopt themes and topics from the students’ textbook. Reviewing the literature on CALL design helped identifying the principles to enhance the effectiveness of the material. Effective CALL material should aim at providing quality input and creating conditions for learners to create comprehensible output (Chapelle, 1998). Therefore, it was decided to enhance the quality of input in the CB reading lessons by integrating more real-life materials and authentic tasks. This involved collecting authentic, interesting and relevant materials from different sources taking into account copyright regulations. The material was collected from magazines, newspapers and the web, and in various formats: texts, pictures, videos or combination of all. Examples of such material include: restaurant menus, colourful pictures, maps, weather broadcast video, food recipes and clips and documentaries. The aim was to accommodate students’ various learning styles and create a more engaging learning environment which would in turn motivate the students to participate and interact. Many CALL experts are concerned not only with the presentation, but also with the amount and quality of comprehensible output in CALL materials. Chapelle (1997) criticizes some of the CALL activities for either not providing or providing very limited output, such as mouse clicks or yes/no options. In order to enhance the quality of our CB reading lessons output, opportunities for correction, negotiation, and repetition of the learners’ output also needed to be provided. We were aiming at maximizing the educational interactivity of these lessons through providing immediate and intelligent feedback allowing students more opportunities for producing comprehensible output and enhancing students’ chances of success. This in turn would promote students’ confidence and minimize their anxiety about participating and interacting in L2. Furthermore, in implementing and applying CALL activities, the nature of student interaction with the material or with each other student through the material is considered a key issue. Egbert (2001:101) points out that, while working with others on the CALL material, students “are not just part of the same group, but they have reasons to talk to each other, to make decisions, negotiate meaning, and develop understanding together”. When designing the CB reading lesson, we needed to maximize students’ opportunities of interaction with each other and with the material. This can be achieved by designing and integrating interesting and relevant tasks to support the textbook material. These new tasks need to involve a variety of motivating activities to promote students’ skills in searching, planning, problem solving, and critical thinking. The content of the CB lessons needs be presented in an interesting manner to maintain students’ interest and involvement in the designed tasks (Heinich et al, 1999). In other words, enhancing positive attitudes and motivation by
facilitating success and addressing students’ interests would help in minimizing the problems of tardiness, poor attendance and lack of classroom participation and interaction. In terms of enhancing students’ reading skills, and since vocabulary is an important component in L2 reading, CB reading lessons can incorporate an easy-to-use electronic talking dictionary. As suggested by Roby (1999), it can be provided pre- or while reading to highlight and clarify important aspects of the text or simply to provide lexical or syntactic information. Chapelle & Jamieson (2008) argue that providing learners with access to word definitions while reading on the computer increases their word meanings’ recall. The CB lessons should promote students’ reading strategies by offering them the opportunity to read authentic texts autonomously and with the teacher’s assistance. Designing new tasks, which involves multimedia and hypermedia not only should promote students’ motivation, but should also help to build students’ background knowledge about the text, prompting them to guess, encouraging them to read for main ideas or search for specific information in a text. As pointed out by Chapelle & Jamieson (2008:138), “visual information helps to call up background knowledge and schemata and to build context for understanding”. The CB lessons should allow students to become independent readers and promote their autonomy. Students should be provided with the opportunity to make their own decisions, progress at their own rate, and have the freedom to satisfy their different learning needs and interests (Richards, 2006). This can be achieved by integrating different reading texts from various resources and by providing various types of help and guidance options (Erben & Sarieva, 2008). Students will gradually develop their confidence to work independently allowing the teacher more time to play the role of a mentor or a facilitator, who creates an encouraging climate for language learning and provides a variety of opportunities for each individual student to use the target language even within such a large class. The delivery system and design package were also selected during the decision stage. ToolBook II Instructor 7.2 was used to design and implement the CB reading lessons. It is a powerful authoring environment which is widely used by educational software designers. It offers the ability to implement different types of integrated exercise as well as provide immediate feedback in a highly interactive, integrated environment. The decision to use ToolBook in the implementation of this study was based on the fact that the CB reading lessons were to be installed on the PCs in a computer lab without an Internet connection; it would be more convenient to deliver the material on CD ROMs, which can be created easily in the ToolBook environment. Some CALL practitioners argue that CD ROM materials are useful forms of CALL particularly in many educational institutions around the world that lack up-to-date technologies, LAN capabilities and speedy access to the WWW. The majority of the material instructional and design content was collected at the design stage. Extra reading materials such as maps, food menus, various newspaper ads, recipes, brochures as well as photos and clip art images were collected from various free resources to be integrated into the lessons later on.

2. Design stage
The first step at this stage was to plan the lessons on paper (storyboarding). This allowed the following design process to be less time consuming. This stage covered three elements:
- The instructional content involves decisions on the type of media that will be included in each page, that is, text, videos, pictures; how tasks will be presented; and what kind of feedback will be available.
- Screen design covers the layout of each page: buttons, fields and the choices of colour themes, fonts and styles. The screen layout aimed at achieving simplicity, clarity and consistency. This refers to the way the lesson pages should be linked and the overall organization of the material. The lessons have a composite structure (Vaughan, 1994) providing users with fixed paths, but also with the possibility to navigate freely at certain points.

3. Development stage
The development stage involves putting the storyboard into practice. All the lesson elements were inserted into the pages and the functional elements were appropriately programmed. Six chapters were adapted from the students’ textbook covering a range of subjects, for instance, student life, nature, food and culture. In addition, more tasks and supplementary materials were incorporated within these themes, e.g., related texts, graphics, sounds and videos. Each lesson starts with a ‘home’ page which introduces the topic, describes what learners are going to read about and presents links to the four parts. The carefully selected photos and the brief introduction on the home page aim at activating students’ schemata about the reading texts (Grabe 1991; Wallace 1992). Students are encouraged to discuss either in pairs or with the rest of the class the new reading topic in a warm-up activity. The aim is to assist students’ language communication skills and promote a free-flowing discussion environment in which students interact with each other and with the teacher. The home page also has a key button which
4. Evaluation stage

At this stage the CB reading lessons had to be tested in order to identify any potential problems regarding their functionality or design. One-hour think aloud sessions were conducted for eight freshmen divided into four groups. Participants were selected according to their computer proficiency: students with low and students with high computer skills. The think aloud technique, also called ‘user walkthrough’ (see Hémard, 1999, 2006) is considered a “recommended method to obtain authentic evaluative data for it is capable of capturing the most comprehensive data addressing both cognitive perspectives as well as the real socio-cultural context of interaction” (Hémard, 2006:271).

References